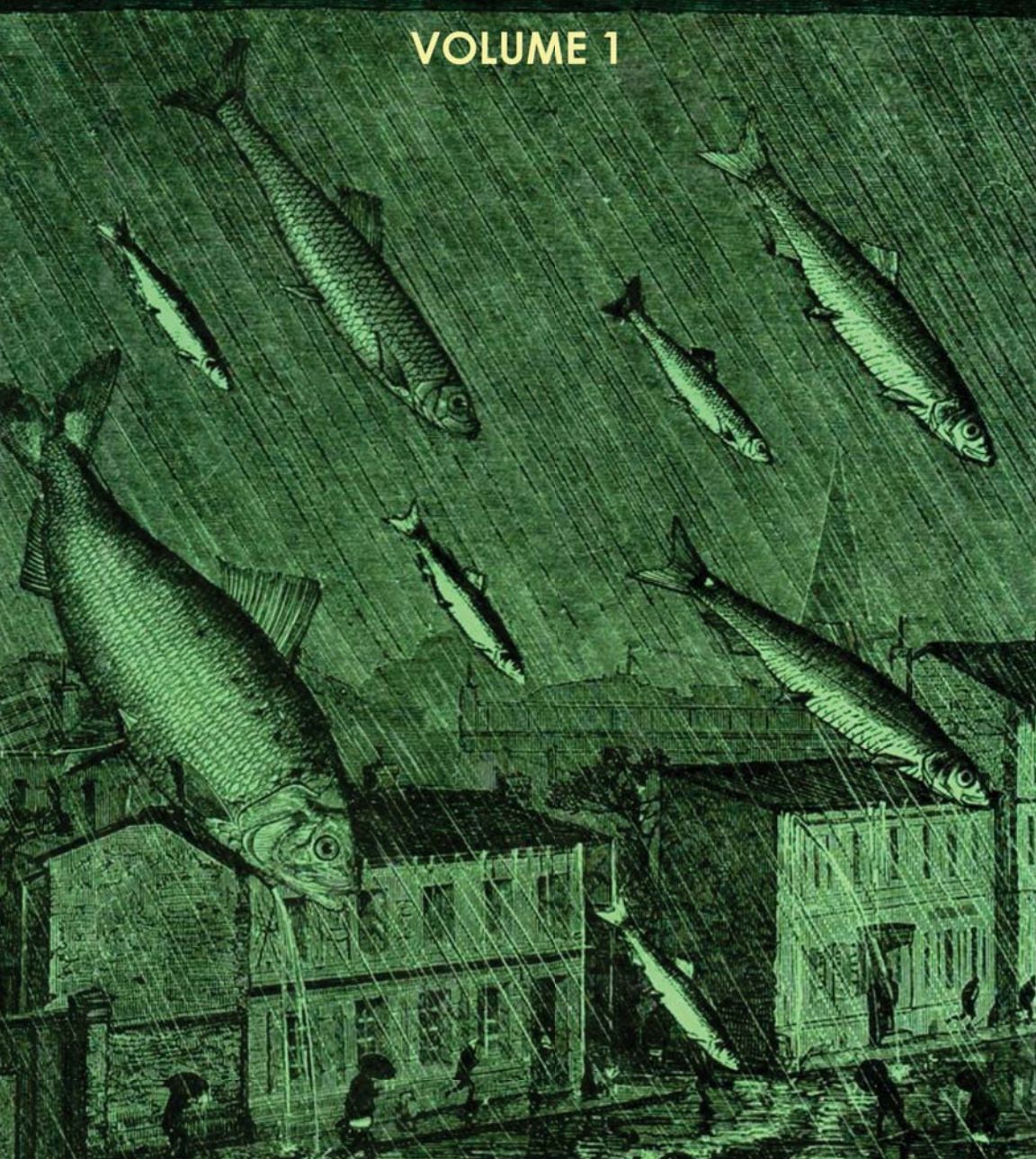
THE COMPLETE BOOKS OF CHARLES FORT

The Book of the Damned
Lo! · Wild Talents · New Lands

VOLUME 1



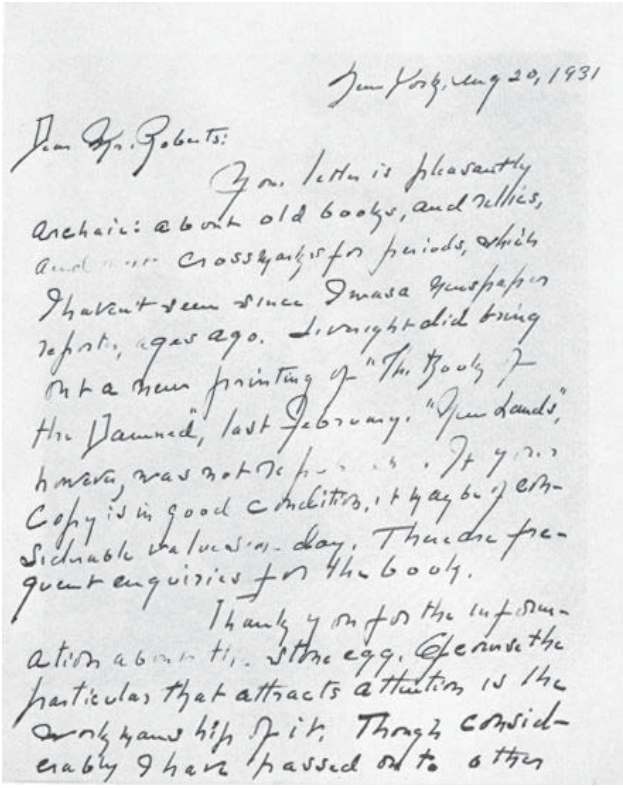
BERSERKER
BOOKS

The Complete Books of Charles Fort

THE BOOK OF THE DAMNED / NEW LANDS / LO! / WILD TALENTS

BIOGRAPHICAL NOTE

Charles Fort was born in Albany, New York, August 6, 1874, and died in the Bronx, May 3, 1932. He spent most of his life in New York City, but lived in London for several years in the twenties. His published works include *The Books of Charles Fort* and a novel, *The Outcast Manufacturers.*



New York, Aug 20, 1931

Dear Mr. Roberts:

Your letter is pleasantly archaic: about old books, and rellies, and [illegible] crossmarks for periods, which I haven't seen since I was a newspaper reporter, ages ago. Liveright did bring out a new printing of "The Book of the Damned", last February. "New Lands", however, was not re[illegible]. If your copy is in good condition, it may be of considerable value [illegible] day. There are frequent enquiries for the book.

Thank you for the information about the stone egg. Of course the particular that attracts attention is the workmanship of it. Though considerably I have passed on to other

Letter from Charles Fort to Kenneth Roberts, the novelist.

subjects, I collect all data I can upon matters recorded in the "B.M.", and hope to have an "expression" upon them, some time.

Those clay bullets and the [illegible] of clay are unique to my collection, unless they can come under the head of "clay formations", which I [illegible] when I was a boy.

Charles Finn

2051 Ryer Ave.,
Bronx,
New York City.

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THE BOOK OF THE DAMNED

1

A PROCESSION of the damned.

By the damned, I mean the excluded.

We shall have a procession of data that Science has excluded.

Battalions of the accursed, captained by pallid data that I have exhumed, will march. You'll read them—or they'll march. Some of them livid and some of them fiery and some of them rotten.

Some of them are corpses, skeletons, mummies, twitching, tottering, animated by companions that have been damned alive. There are giants that will walk by, though sound asleep. There are things that are theorems and things that are rags: they'll go by like Euclid arm in arm with the spirit of anarchy. Here and there will flit little harlots. Many are clowns. But many are of the highest respectability. Some are assassins. There are pale stenches and gaunt superstitions and mere shadows and lively malices: whims and amiabilities. The naïve and the pedantic and the bizarre and the grotesque and the sincere and the insincere, the profound and the puerile.

A stab and a laugh and the patiently folded hands of hopeless propriety.

The ultra-respectable, but the condemned, anyway.

The aggregate appearance is of dignity and dissoluteness: the aggregate voice is a defiant prayer: but the spirit of the whole is processional.

The power that has said to all these things that they are damned, is Dogmatic Science.

But they'll march.

The little harlots will caper, and freaks will distract attention, and the clowns will break the rhythm of the whole with their buffooneries—but the solidity of the procession as a whole: the impressiveness of things that pass and pass and pass, and keep on and keep on and keep on coming.

The irresistibleness of things that neither threaten nor jeer nor defy, but arrange themselves in mass-formations that pass and pass and keep on passing.

. . . . . .

So, by the damned, I mean the excluded.

But by the excluded I mean that which will some day be the excluding.

Or everything that is, won't be.

And everything that isn't, will be—

But, of course, will be that which won't be—

It is our expression that the flux between that which isn't and that which won't be, or the state that is commonly and absurdly called "existence," is a rhythm of heavens and hells: that the damned won't stay damned; that salvation only precedes perdition. The inference is that some day our accursed tatterdemalions will be sleek angels, Then the sub-inference is that some later day, back they'll go whence they came.

. . . . . .

It is our expression that nothing can attempt to be, except by attempting to exclude something else: that that which is commonly called "being" is a state that is wrought more or less definitely proportionately to the appearance of positive difference between that which is included and that which is excluded.

But it is our expression that there are no positive differences: that all things are like a mouse and a bug in the heart of a cheese. Mouse and a bug: no two things could seem more unlike. They're there a week, or they stay there a month: both are then only transmutations of cheese. I think we're all bugs and mice, and are only different expressions of an all-inclusive cheese.

Or that red is not positively different from yellow: is only another degree of whatever vibrancy yellow is a degree of: that red and yellow are continuous, or that they merge in orange.

So then that, if, upon the basis of yellowness and redness, Science should attempt to classify all phenomena, including all red things as veritable, and excluding all yellow things as false or illusory, the demarcation would have to be false and arbitrary, because things colored orange, constituting continuity, would belong on both sides of the attempted border-line.

As we go along, we shall be impressed with this:

That no basis for classification, or inclusion and exclusion, more reasonable than that of redness and yellowness has ever been conceived of.

Science has, by appeal to various bases, included a multitude of data. Had it not done so, there would be nothing with which to seem to be. Science has, by appeal to various bases, excluded a multitude of data. Then, if redness is continuous with yellowness: if every basis of admission is continuous with every basis of exclusion, Science must have excluded some

things that are continuous with the accepted. In redness and yellowness, which merge in orangeness, we typify all tests, all standards, all means of forming an opinion—

Or that any positive opinion upon any subject is illusion built upon the fallacy that there are positive differences to judge by—

That the quest of all intellection has been for something—a fact, a basis, a generalization, law, formula, a major premise that is positive: that the best that has ever been done has been to say that some things are self-evident—whereas, by evidence we mean the support of something else—

That this is the quest; but that it has never been attained; but that Science has acted, ruled, pronounced, and condemned as if it had been attained.

What is a house?

It is not possible to say what anything is, as positively distinguished from anything else, if there are no positive differences.

A barn is a house, if one lives in it. If residence constitutes house-ness, because style of architecture does not, then a bird's nest is a house: and human occupancy is not the standard to judge by, because we speak of dogs' houses; nor material, because we speak of snow houses of Eskimos—or a shell is a house to a hermit crab—or was to the mollusk that made it—or things seemingly so positively different as the White House at Washington and a shell on the seashore are seen to be continuous.

So no one has ever been able to say what electricity is, for instance. It isn't anything, as positively distinguished from heat or magnetism or life. Metaphysicians and theologians and biologists have tried to define life. They have failed, because, in a positive sense, there is nothing to define: there is no phenomenon of life that is not, to some degree, manifest in chemism, magnetism, astronomic motions.

White coral islands in a dark blue sea.

Their seeming of distinctness: the seeming of individuality, or of positive difference one from another—but all are only projections from the same sea bottom. The difference between sea and land is not positive. In all water there is some earth: in all earth there is some water.

So then that all seeming things are not things at all, if all are inter-continuous, any more than is the leg of a table a thing in itself, if it is only a projection from something else: that not one of us is a real person, if, physically, we're continuous with environment; if, psychically, there is nothing to us but expression of relation to environment.

Our general expression has two aspects:

Conventional monism, or that all “things” that seem to have identity of their own are only islands that are projections from something underlying, and have no real outlines of their own.

But that all “things,” though only projections, are projections that are striving to break away from the underlying that denies them identity of their own.

I conceive of one inter-continuous nexus, in which and of which all seeming things are only different expressions, but in which all things are localizations of one attempt to break away and become real things, or to establish entity or positive difference or final demarcation or unmodified independence—or personality or soul, as it is called in human phenomena —

That anything that tries to establish itself as a real, or positive, or absolute system, government, organization, self, soul, entity, individuality, can so attempt only by drawing a line about itself, or about the inclusions that constitute itself, and damning or excluding, or breaking away from, all other “things”:

That, if it does not so act, it cannot seem to be;

That, if it does so act, it falsely and arbitrarily and futilely and disastrously acts, just as would one who draws a circle in the sea, including a few waves, saying that the other waves, with which the included are continuous, are positively different, and stakes his life upon maintaining that the admitted and the damned are positively different.

Our expression is that our whole existence is animation of the local by an ideal that is realizable only in the universal:

That, if all exclusions are false, because always are included and excluded continuous: that if all seeming of existence perceptible to us is the product of exclusion, there is nothing that is perceptible to us that really is: that only the universal can really be.

Our especial interest is in modern science as a manifestation of this one ideal or purpose or process:

That it has falsely excluded, because there are no positive standards to judge by: that it has excluded things that, by its own pseudo-standards, have as much right to come in as have the chosen.

. . . . . .

Our general expression:

That the state that is commonly and absurdly called “existence,” is a flow, or a current, or an attempt, from negativeness to positive-ness, and is intermediate to both.

By positiveness we mean:

Harmony, equilibrium, order, regularity, stability, consistency, unity, realness, system, government, organization, liberty, independence, soul, self, personality, entity, individuality, truth, beauty, justice, perfection, definiteness—

That all that is called development, progress, or evolution is movement toward, or attempt toward, this state for which, or for aspects of which, there are so many names, all of which are summed up in the one word “positiveness.”

At first this summing up may not be very readily acceptable. At first it may seem that all these words are not synonyms: that “harmony” may mean “order,” but that by “independence,” for instance, we do not mean “truth,” or that by “stability” we do not mean “beauty,” or “system,” or “justice.”

I conceive of one inter-continuous nexus, which expresses itself in astronomic phenomena, and chemic, biologic, psychic, sociologic: that it is everywhere striving to localize positiveness: that to this attempt in various fields of phenomena—which are only quasi-different—we give different names. We speak of the “system” of the planets, and not of their “government”: but in considering a store, for instance, and its management, we see that the words are interchangeable. It used to be customary to speak of chemic equilibrium, but not of social equilibrium: that false demarcation has been broken down. We shall see that by all these words we mean the same state. As every-day conveniences, or in terms of common illusions, of course, they are not synonyms. To a child an earth worm is not an animal. It is to the biologist.

By “beauty,” I mean that which seems complete.

Obversely, that the incomplete, or the mutilated, is the ugly.

Venus de Milo.

To a child she is ugly.

When a mind adjusts to thinking of her as a completeness, even though, by physiologic standards, incomplete, she is beautiful.

A hand thought of only as a hand, may seem beautiful.

Found on a battlefield—obviously a part—not beautiful.

But everything in our experience is only a part of something else that in turn is only a part of still something else—or that there is nothing beautiful in our experience: only appearances that are intermediate to beauty and ugliness—that only universality is complete: that only the complete is the beautiful: that every attempt to achieve beauty is an attempt to give to the local the attribute of the universal.

By stability, we mean the immovable and the unaffected. But all seeming things are only reactions to something else. Stability, too, then, can be only the universal, or that besides which there is nothing else. Though some things seem to have—or have—higher approximations to stability than have others, there are, in our experience, only various degrees of intermediateness to stability and instability. Every man, then, who works for stability under its various names of "permanency," "survival," duration," is striving to localize in something the state that is realizable only in the universal.

By independence, entity, and individuality, I can mean only that besides which there is nothing else, if given only two things, they must be continuous and mutually affective, if everything is only a reaction to something else, and any two things would be destructive of each other's independence, entity, or individuality.

All attempted organizations and systems and consistencies, some approximating far higher than others, but all only intermediate to Order and Disorder, fail eventually because of their relations with outside forces. All are attempted completenesses. If to all local phenomena there are always outside forces, these attempts, too, are realizable only in the state of completeness, or that to which there are no outside forces.

Or that all these words are synonyms, all meaning the state that we call the positive state—

That our whole "existence" is a striving for the positive state.

The amazing paradox of it all:

That all things are trying to become the universal by excluding other things.

That there is only this one process, and that it does animate all expressions, in all fields of phenomena, of that which we think of as one inter-continuous nexus:

The religious and their idea or ideal of the soul. They mean distinct, stable entity, or a state that is independent, and not a mere flux of vibrations

or complex of reactions to environment, continuous with environment, merging away with an infinitude of other interdependent complexes.

But the only thing that would not merge away into something else would be that besides which there is nothing else.

That Truth is only another name for the positive state, or that the quest for Truth is the attempt to achieve positiveness:

Scientists who have thought that they were seeking Truth, but who were trying to find out astronomic, or chemic, or biologic truths. But Truth is that besides which there is nothing: nothing to modify it, nothing to question it, nothing to form an exception: the all-inclusive, the complete—

By Truth I mean the Universal.

So chemists have sought the true, or the real, and have always failed in their endeavors, because of the outside relations of chem ical phenomena: have failed in the sense that never has a chemical law, without exceptions, been discovered: because chemistry is continuous with astronomy, physics, biology— For instance, if the sun should greatly change its distance from this earth, and if human life could survive, the familiar chemic formulas would no longer work out: a new science of chemistry would have to be learned—

Or that all attempts to find Truth in the special are attempts to find the universal in the local.

And artists and their striving for positiveness, under the name of "harmony"—but their pigments that are oxydizing, or are responding to a deranging environment—or the strings of musical instruments that are differently and disturbingly adjusting to outside chemic and thermal and gravitational forces—again and again this oneness of all ideals, and that it is the attempt to be, or to achieve, locally, that which is realizable only universally. In our experience there is only intermediateness to harmony and discord. Harmony is that besides which there are no outside forces.

And nations that have fought with only one motive: for individuality, or entity, or to be real, final nations, not subordinate to, or parts of, other nations. And that nothing but intermediateness has ever been attained, and that history is record of failures of this one attempt, because there always have been outside forces, or other nations contending for the same goal.

As to physical things, chemic, mineralogic, astronomic, it is not customary to say that they act to achieve Truth or Entity, but it is understood that all motions are toward Equilibrium: that there is no motion

except toward Equilibrium, of course always away from some other approximation to Equilibrium.

All biologic phenomena act to adjust: there are no biologic actions other than adjustments.

Adjustment is another name for Equilibrium. Equilibrium is the Universal, or that which has nothing external to derange it.

But that all that we call “being” is motion: and that all motion is the expression, not of equilibrium, but of equilibrating, or of equilibirium unattained: that life-motions are expressions of equilibrium unattained: that all thought relates to the unattained: that to have what is called being in our quasi-state, is not to be in the positive sense, or is to be intermediate to Equilibrium and Inequi-librium.

So then:

That all phenomena in our intermediate state, or quasi-state, represent this one attempt to organize, stabilize, harmonize, individualize—or to positivize, or to become real:

That only to have seeming is to express failure or intermediate-ness to final failure and final success;

That every attempt—that is observable—is defeated by Continuity, or by outside forces—or by the excluded that are continuous with the included:

That our whole “existence” is an attempt by the relative to be the absolute, or by the local to be the universal.

In this book, my interest is in this attempt as manifested in modern science:

That it has attempted to be real, true, final, complete, absolute:

That, if the seeming of being, here, in our quasi-state, is the product of exclusion that is always false and arbitrary, if always are included and excluded continuous, the whole seeming system, or entity, of modern science is only quasi-system, or quasi-entity, wrought by the same false and arbitrary process as that by which the still less positive system that preceded it, or the theological system, wrought the illusion of its being.

In this book, I assemble some of the data that I think are of the falsely and arbitrarily excluded.

The data of the damned.

I have gone into the outer darkness of scientific and philosophical transactions and proceedings, ultra-respectable, but covered with the dust of

disregard. I have descended into journalism. I have come back with the quasi-souls of lost data.

They will march.

. . . . . .

As to the logic of our expressions to come—

That there is only quasi-logic in our mode of seeming:

That nothing ever has been proved—

Because there is nothing to prove.

When I say that there is nothing to prove, I mean that to those who accept Continuity, or the merging away of all phenomena into other phenomena, without positive demarcations one from another, there is, in a positive sense, no one thing. There is nothing to prove.

For instance nothing can be proved to be an animal—because animalness and vegetableness are not positively different. There are some expressions of life that are as much vegetable as animal, or that represent the merging of animalness and vegetableness. There is then no positive test, standard, criterion, means of forming an opinion. As distinct from vegetables, animals do not exist. There is nothing to prove. Nothing could be proved to be good, for instance. There is nothing in our "existence" that is good, in a positive sense, or as really outlined from evil. If to forgive be good in times of peace, it is evil in wartime. There is nothing to prove: good in our experience is continuous with, or is only another aspect of evil.

As to what I'm trying to do now—I accept only. If I can't see universally, I only localize.

So, of course then, that nothing ever has been proved:

That theological pronouncements are as much open to doubt as ever they were, but that, by a hypnotizing process, they became dominant over the majority of minds in their era;

That, in a succeeding era, the laws, dogmas, formulas, principles, of materialistic science never were proved, because they are only localizations simulating the universal; but that the leading minds of their era of dominance were hypnotized into more or less firmly believing them.

Newton's three laws, and that they are attempts to achieve positiveness, or to defy and break Continuity, and are as unreal as are all other attempts to localize the universal:

That, if every observable body is continuous, mediately or immediately, with all other bodies, it cannot be influenced only by its own inertia, so that

there is no way of knowing what the phenomena of inertia may be; that, if all things are reacting to an infinitude of forces, there is no way of knowing what the effects of only one impressed force would be; that if every reaction is continuous with its action, it cannot be conceived of as a whole, and that there is no way of conceiving what it might be equal and opposite to—

Or that Newton's three laws are three articles of faith;

Or that demons and angels and inertias and reactions are all mythological characters;

But that, in their eras of dominance, they were almost as firmly believed in as if they had been proved.

Enormities and preposterousnesses will march.

They will be "proved" as well as Moses or Darwin or Lyell ever "proved" anything.

. . . . . .

We substitute acceptance for belief.

Cells of an embryo take on different appearances in different eras.

The more firmly established, the more difficult to change.

That social organism is embryonic.

That firmly to believe is to impede development.

That only temporarily to accept is to facilitate.

. . . . . .

But:

Except that we substitute acceptance for belief, our methods will be the conventional methods; the means by which every belief has been formulated and supported: or our methods will be the methods of theologians and savages and scientists and children. Because, if all phenomena are continuous, there can be no positively different methods. By the inconclusive means and methods of cardinals and fortune tellers and evolutionists and peasants, methods which must be inconclusive, if they relate always to the local, and if there is nothing local to conclude, we shall write this book.

If it function as an expression of its era, it will prevail.

. . . . . .

All sciences begin with attempts to define.

Nothing ever has been defined.

Because there is nothing to define.

Darwin wrote *The Origin of Species.*

He was never able to tell what he meant by a "species."

It is not possible to define.

Nothing has ever been finally found out.

Because there is nothing final to find out.

It's like looking for a needle that no one ever lost in a haystack that never was—

But that all scientific attempts really to find out something, whereas really there is nothing to find out, are attempts, themselves, really to be something.

A seeker of Truth. He will never find it. But the dimmest of possibilities —he may himself become Truth.

Or that science is more than an inquiry:

That it is a pseudo-construction, or a quasi-organization: that it is an attempt to break away and locally establish harmony, stability, equilibrium, consistency, entity—

Dimmest of possibilities—that it may succeed.

. . . . . .

That ours is a pseudo-existence, and that all appearances in it partake of its essential fictitiousness—

But that some appearances approximate far more highly to the positive state than do others.

We conceive of all "things" as occupying gradations, or steps in series between positiveness and negativeness, or realness and unrealness: that some seeming things are more nearly consistent, just, beautiful, unified, individual, harmonious, stable—than others.

We are not realists. We are not idealists. We are intermediatists —that nothing is real, but that nothing is unreal: that all phenomena are approximations one way or the other between realness and unrealness.

So then:

That our whole quasi-existence is an intermediate stage between positiveness and negativeness or realness and unrealness.

Like purgatory, I think.

But in our summing up, which was very sketchily done, we omitted to make clear that Realness is an aspect of the positive state.

By Realness, I mean that which does not merge away into something else, and that which is not partly something else: that which is not a reaction to, or an imitation of, something else. By a real hero, we mean one who is not partly a coward, or whose actions and motives do not merge away into cowardice. But, if in Continuity, all things do merge, by Realness, I mean the Universal, besides which there is nothing with which to merge.

That, though the local might be universalized, it is not conceivable that the universal can be localized: but that high approximations there may be, and that these approximate successes may be translated out of Intermediateness into Realness—quite as, in a relative sense, the industrial world recruits itself by translating out of unrealness, or out of the seemingly less real imaginings of inventors, machines which seem, when set up in factories, to have more of Realness than they had when only imagined.

That all progress, if all progress is toward stability, organization, harmony, consistency, or positiveness, is the attempt to become real.

So, then, in general metaphysical terms, our expression is that, like a purgatory, all that is commonly called "existence," which we call Intermediateness, is quasi-existence, neither real nor unreal, but expression of attempt to become real, or to generate for or recruit a real existence.

Our acceptance is that Science, though usually thought of so specifically, or in its own local terms, usually supposed to be a prying into old bones, bugs, unsavory messes, is an expression of this one spirit animating all Intermediateness: that, if Science could absolutely exclude all data but its own present data, or that which is assimilable with the present quasi-organization, it would be a real system, with positively definite outlines—it would be real.

Its seeming approximation to consistency, stability, system—positiveness or realness—is sustained by damning the irreconcilable or the unassimilable—

All would be well.

All would be heavenly—

If the damned would only stay damned.

2

IN the autumn of 1883, and for years afterward, occurred brilliant-colored sunsets, such as had never been seen before within the memory of all observers. Also there were blue moons.

I think that one is likely to smile incredulously at the notion of blue moons. Nevertheless they were as common as were green suns in 1883.

Science had to account for these unconventionalities. Such publications as *Nature* and *Knowledge* were besieged with inquiries.

I suppose, in Alaska and in the South Sea Islands, all the medicine men were similarly upon trial.

Something had to be thought of.

Upon the 28th of August, 1883, the volcano of Krakatoa, of the Straits of Sunda, had blown up.

Terrific.

We're told that the sound was heard 2,000 miles, and that 36,380 persons were killed. Seems just a little unscientific, or impositive, to me: marvel to me we're not told 2,163 miles and 36,387 persons. The volume of smoke that went up must have been visible to other planets—or, tormented with our crawlings and scurryings, the earth complained to Mars; swore a vast black oath at us.

In all text-books that mention this occurrence—no exception so far so I have read—it is said that the extraordinary atmospheric effects of 1883 were first noticed in the last of August or the first of September.

That makes a difficulty for us.

It is said that these phenomena were caused by particles of volcanic dust that were cast high in the air by Krakatoa.

This is the explanation that was agreed upon in 188_3—

But for seven years the atmospheric phenomena continued—

Except that, in the seven, there was a lapse of several years— and where was the volcanic dust all that time?

You'd think that such a question as that would make trouble?

Then you haven't studied hypnosis. You have never tried to demonstrate to a hypnotic that a table is not a hippopotamus. According to our general acceptance, it would be impossible to demonstrate such a thing. Point out a hundred reasons for saying that a hippopotamus is not a table: you'll have to end up agreeing that neither is a table a table—it only seems to be a table. Well, that's what the hippopotamus seems to be. So how can you prove that something is not something else, when neither is something else some other thing? There's nothing to prove.

This is one of the profundities that we advertised in advance.

You can oppose an absurdity only with some other absurdity. But Science is established preposterousness. We divide all intellection: the obviously preposterousness and the established.

But Krakatoa: that's the explanation that the scientists gave. I don't know what whopper the medicine men told.

We see, from the start, the very strong inclination of science to deny, as much as it can, external relations of this earth.

This book is an assemblage of data of external relations of this earth. We take the position that our data have been damned, upon no consideration for individual merits or demerits, but in conformity with a general attempt to hold out for isolation of this earth. This is attempted positiveness. We take the position that science can no more succeed than, in a similar endeavor, could the Chinese, or than could the United States. So then, with only pseudo-consideration of the phenomena of 1883, or as an expression of positivism in its aspect of isolation, or unrelatedness, scientists have perpetrated such an enormity as suspension of volcanic dust seven years in the air— disregarding the lapse of several years—rather than to admit the arrival of dust from somewhere beyond this earth. Not that scientists themselves have ever achieved positiveness, in its aspect of unitedness, among themselves—because Nordenskiold, before 1883, wrote a great deal upon his theory of cosmic dust, and Prof. Cleveland Abbe contended against the Krakatoan explanation—but that this is the orthodoxy of the main body of scientists.

My own chief reason for indignation here:

That this preposterous explanation interferes with some of my own enormities.

It would cost me too much explaining, if I should have to admit that this earth's atmosphere has such sustaining power.

Later, we shall have data of things that have gone up in the air and that have stayed up—somewhere—weeks—months—but not by the sustaining power of this earth's atmosphere. For instance, the turtle of Vicksburg. It seems to me that it would be ridiculous to think of a good-sized turtle hanging, for three or four months, upheld only by the air, over the town of Vicksburg. When it comes to the horse and the barn—I think that they'll be classics some day, but I can never accept that a horse and a barn could float several months in this earth's atmosphere.

The orthodox explanation:

See the *Report of the Krakatoa Committee of the Royal Society.* It comes out absolutely for the orthodox explanation— absolutely and beautifully, also expensively. There are 492 pages in the "Report," and 40 plates, some of them marvelously colored. It was issued after an investigation that took five years. You couldn't think of anything done more efficiently, artistically, authoritatively. The mathematical parts are especially impressive: distribution of the dust of Krakatoa; velocity of translation and rates of subsidence; altitudes and persistences—

Annual Register, 1883-105:

That the atmospheric effects that have been attributed to Krakatoa were seen in Trinidad before the eruption occurred;

Knowledge, 5-418:

That they were seen in Natal, South Africa, six months before the eruption.

. . . . . .

Inertia and its inhospitality.

Or raw meat should not be fed to babies.

We shall have a few data initiatorily.

I fear me that the horse and the barn were a little extreme for our budding liberalities.

The outrageous is the reasonable, if introduced politely.

Hailstones, for instance. One reads in the newspapers of hailstones the size of hens' eggs. One smiles. Nevertheless I will engage to list one hundred instances, from the *Monthly Weather Review,* of hailstones the size of hens' eggs. There is an account in *Nature,* Nov.1, 1894, of hailstones that weighed almost two pounds each. See Chambers' Encyclopedia for three-pounders. *Report of the Smithsonian Institution, 1*870-479—two-pounders

authenticated, and six-pounders reported. At Seringapatam, India, about the year 1800, fell a hailstone—

I fear me, I fear me: this is one of the profoundly damned. I blurt out something that should, perhaps, be withheld for several hundred pages—but that damned thing was the size of an elephant.

We laugh.

Or snowflakes. Size of saucers. Said to have fallen at Nashville, Tenn., Jan. 24, 1891. One smiles.

"In Montana, in the winter of 1887, fell snowflakes 15 inches across, and 8 inches thick." (*Monthly Weather Review*, 1915-73.)

In the topography of intellection, I should say that what we call knowledge is ignorance surrounded by laughter.

. . . . . .

Black rains—red rains—the fall of a thousand tons of butter. Jet-black snow—pink snow—blue hailstones—hailstones flavored like oranges.

Punk and silk and charcoal.

. . . . . .

About one hundred years ago, if anyone was so credulous as to think that stones had ever fallen from the sky, he was reasoned with:

In the first place there are no stones in the sky:

Therefore no stones can fall from the sky.

Or nothing more reasonable or scientific or logical than that could be said upon any subject. The only trouble is the universal trouble: that the major premise is not real, or is intermediate somewhere between realness and unrealness.

In 1772, a committee, of whom Lavoisier was a member, was appointed by the French Academy, to investigate a report that a stone had fallen from the sky at Luce, France. Of all attempts at positiveness, in its aspect of isolation, I don't know of anything that has been fought harder for than the notion of this earth's unrelatedness. Lavoisier analyzed the stone of Luce. The exclusionists' explanation at that time was that stones do not fall from the sky: that luminous objects may seem to fall, and that hot stones may be picked up where a luminous object seemingly had landed—only lightning striking a stone, heating, even melting it.

The stone of Luce showed signs of fusion.

Lavoisier's analysis "absolutely proved" that this stone had not fallen: that it had been struck by lightning.

So, authoritatively, falling stones were damned. The stock means of exclusion remained the explanation of lightning that was seen to strike something—that had been upon the ground in the first place.

But positiveness and the fate of every positive statement. It is not customary to think of damned stones raising an outcry against a sentence of exclusion, but, subjectively, aerolites did—or data of them bombarded the walls raised against them—

*Monthly Review, I*796-426

"The phenomenon which is the subject of the remarks before us will seem to most persons as little worthy of credit as any that could be offered. The falling of large stones from the sky, without any assignable cause of their previous ascent, seems to partake so much of the marvelous as almost entirely to exclude the operation of known and natural agents. Yet a body of evidence is here brought to prove that such events have actually taken place, and we ought not to withhold from it a proper degree of attention."

The writer abandons the first, or absolute, exclusion, and modifies it with the explanation that the day before a reported fall of stones in Tuscany, June 16, 1794, there had been an eruption of Vesuvius—

Or that stones do fall from the sky, but that they are stones that have been raised to the sky from some other part of the earth's surface by whirlwinds or by volcanic action.

It's more than one hundred and twenty years later. I know of no aerolite that has ever been acceptably traced to terrestrial origin.

Falling stones had to be undamned—though still with a reservation that held out for exclusion of outside forces.

One may have the knowledge of a Lavoisier, and still not be able to analyze, not be able even to see, except conformably with the hypnoses, or the conventional reactions against hypnoses, of one's era.

We believe no more.

We accept.

Little by little the whirlwind and volcano explanations had to be abandoned, but so powerful was this exclusion-hypnosis, sentence of damnation, or this attempt at positiveness, that far into our own times some scientists, notably Prof. Lawrence Smith and Sir Robert Ball, continued to hold out against all external origins, asserting that nothing could fall to this

earth, unless it had been cast up or whirled up from some other part of this earth's surface.

It's as commendable as anything ever has been—by which I mean it's intermediate to the commendable and the censurable.

It's virginal.

Meteorites, data of which were once of the damned, have been admitted, but the common impression of them is only a retreat of attempted exclusion: that only two kinds of substance fall from the sky: metallic and stony: that the metallic objects are of iron and nickel—

Butter and paper and wool and silk and resin.

We see, to start with, that the virgins of science have fought and wept and screamed against external relations—upon two grounds:

There in the first place;

Or up from one part of this earth's surface and down to another.

As late as November, 1902, in *Nature Notes*, 13-231, a member of the Selborne Society still argued that meteorites do not fall from the sky; that they are masses of iron upon the ground "in the first place," that attract lightning; that the lightning is seen, and is mistaken for a falling, luminous object—

By progress we mean rape.

Butter and beef and blood and a stone with strange inscriptions upon it.

3

SO then, it is our expression that Science relates to real knowledge no more than does the growth of a plant, or the organization of a department store, or the development of a nation: that all are assimilative, or organizing, or systematizing processes that represent different attempts to attain the positive state—the state commonly called heaven, I suppose I mean.

There can be no real science where there are indeterminate variables, but every variable is, in finer terms, indeterminate, or irregular, if only to have the appearance of being in Intermediate-ness is to express regularity unattained. The invariable, or the real and stable, would be nothing at all in Intermediateness—rather as, but in relative terms, an undistorted interpretation of external sounds in the mind of a dreamer could not continue to exist in a dreaming mind, because that touch of relative realness would be of awakening and not of dreaming. Science is the attempt to awaken to realness, wherein it is attempt to find regularity and uniformity. Or the regular and uniform would be that which has nothing external to disturb it. By the universal we mean the real. Or the notion is that the underlying super-attempt, as expressed in Science, is indifferent to the subject-matter of Science: that the attempt to regularize is the vital spirit. Bugs and stars and chemical messes: that they are only quasi-real, and that of them there is nothing real to know; but that systematization of pseudo-data is approximation to realness or final awakening—

Or a dreaming mind—and its centaurs and canary birds that turn into giraffes—there could be no real biology upon such subjects, but attempt, in a dreaming mind, to systematize such appearances would be movement toward awakening—if better mental co-ordination is all that we mean by the state of being awake— relatively awake.

So it is, that having attempted to systematize, by ignoring externality to the greatest possible degree, the notion of things dropping in upon this earth, from externality, is as unsettling and as unwelcome to Science as—tin horns blowing in upon a musician's relatively symmetric composition—

flies alighting upon a painter's attempted harmony, and tracking colors one into another—suffragist getting up and making a political speech at a prayer meeting.

If all things are of a oneness, which is a state intermediate to unrealness and realness, and if nothing has succeeded in breaking away and establishing entity for itself, and could not continue to "exist" in intermediateness, if it should succeed, any more than could the born still at the same time be the uterine, I of course know of no positive difference between Science and Christian Science—and the attitude of both toward the unwelcome is the same—"it does not exist."

A Lord Kelvin and a Mrs. Eddy, and something not to their liking—it does not exist.

Of course not, we Intermediates say: but, also, that, in Intermediateness, neither is there absolute non-existence.

Or a Christian Scientist and a toothache—neither exists in the final sense: also neither is absolutely non-existent, and, according to our therapeutics, the one that more highly approximates to realness will win.

A secret of power—

I think it's another profundity.

Do you want power over something?

Be more nearly real than it.

We'll begin with yellow substances that have fallen upon this earth: we'll see whether our data of them have a higher approximation to realness than have the dogmas of those who deny their existence—that is, as products from somewhere external to this earth.

In mere impressionism we take our stand. We have no positive tests nor standards. Realism in art: realism in science—they pass away. In 1859, the thing to do was to accept Darwinism; now many biologists are revolting and trying to conceive of something else. The thing to do was to accept it in its day, but Darwinism of course was never proved:

The fittest survive.

What is meant by the fittest?

Not the strongest; not the cleverest—

Weakness and stupidity everywhere survive.

There is no way of determining fitness except in that a thing does survive.

"Fitness," then, is only another name for "survival."

Darwinism:

That survivors survive.

Although Darwinism, then, seems positively baseless, or absolutely irrational, its massing of supposed, data, and its attempted coherence approximate more highly to Organization and Consistency than did the inchoate speculations that preceded it.

Or that Columbus never proved that the earth is round.

Shadow of the earth on the moon?

No one has ever seen it in its entirety. The earth's shadow is much larger than the moon. If the periphery of the shadow is curved—but the convex moon—a straight-edged object will cast a curved shadow upon a surface that is convex.

All the other so-called proofs may be taken up in the same way. It was impossible for Columbus to prove that the earth is round. It was not required: only that with a higher seeming of positiveness than that of his opponents, he should attempt. The thing to do, in 1492, was nevertheless to accept that beyond Europe, to the west, were other lands.

I offer for acceptance, as something concordant with the spirit of this first quarter of the 20th century, the expression that beyond this earth are—other lands—from which come things as, from America, float things to Europe.

As to yellow substances that have fallen upon this earth, the endeavor to exclude extra-mundane origins is the dogma that all yellow rains and yellow snows are colored with pollen from this earth's pine trees. *Symons' Meteorological Magazine* is especially prudish in this respect and regards as highly improper all advances made by other explainers.

Nevertheless, the *Monthly Weather Review,* May, 1877, reports a golden-yellow fall, of Feb. 27, 1877, at Peckloh, Germany, in which four kinds of organisms, not pollen, were the coloring matter. There were minute things shaped like arrows, coffee beans, horns, and disks.

They may have been symbols. They may have been objective hieroglyphics—

Mere passing fancy—let it go—

In the *Annales de Chimie*, 85-288, there is a list of rains said to have contained sulphur. I have thirty or forty other notes. I'll not use one of them. I'II admit that every one of them is upon a fall of pollen. I said, to begin with, that our methods would be the methods of theologians and scientists, and they always begin with an appearance of liberality. I grant thirty or

forty points to start with. I'm as liberal as any of them—or that my liberality won't cost me anything—the enormousness of the data that we shall have.

Or just to look over a typical instance of this dogma, and the way it works out:

In the *American Journal of Science*, 1-42-196, we are told of a yellow substance that fell by the bucketful upon a vessel, one "windless" night in June, in Pictou Harbor, Nova Scotia. The writer analyzed the substance, and it was found to "give off nitrogen and ammonia and an animal odor."

Now, one of our Intermediatist principles, to start with, is that so far from positive, in the aspect of Homogeneousness, are all substances, that, at least in what is called an elementary sense, anything can be found anywhere. Mahogany logs on the coast of Greenland; bugs of a valley on the top of Mt. Blanc; atheists at a prayer meeting; ice in India. For instance, chemical analysis can reveal that almost any dead man was poisoned with arsenic, we'll say, because there is no stomach without some iron, lead, tin, gold, arsenic in it and of it—which, of course, in a broader sense, doesn't matter much, because a certain number of persons must, as a restraining influence, be executed for murder every year; and, if detectives aren't able really to detect anything, illusion of their success is all that is necessary, and it is very honorable to give up one's life for society as a whole.

The chemist who analyzed the substance of Pictou sent a sample to the Editor of the *Journal.* The Editor of course found pollen in it.

My own acceptance is that there'd have to be some pollen in it: that nothing could very well fall through the air, in June, near the pine forests of Nova Scotia, and escape all floating spores of pollen. But the Editor does not say that this substance "contained" pollen. He disregards "nitrogen, ammonia, and an animal odor," and says that the substance was pollen. For the sake of our thirty or forty tokens of liberality, or pseudo-liberality, if we can't be really liberal, we grant that the chemist of the first examination probably wouldn't know an animal odor if he were janitor of a menagerie. As we go along, however, there can be no such sweeping ignoring of this phenomenon:

The fall of animal-matter from the sky.

I'd suggest, to start with, that we'd put ourselves in the place of deep-sea fishes:

How would they account for the fall of animal-matter from above?

They wouldn't try—

Or it's easy enough to think of most of us as deep-sea fishes of a kind.

Jour. Franklin Inst., 90-11:

That, upon the 14th of February, 1870, there fell, at Genoa, Italy, according to Director Boccardo, of the Technical Institute of Genoa, and Prof. Castellani, a yellow substance. But the microscope revealed numerous globules of cobalt blue, also corpuscles of a pearly color that resembled starch. See *Nature*, 2-166.

Comptes Rendus, 56-972:

M. Bouis says of a substance, reddish varying to yellowish, that fell enormously and successively, or upon April 30, May 1 and May 2, in France and Spain, that it carbonized and spread the odor of charred animal matter—that it was not pollen—that in alcohol it left a residue of resinous matter.

Hundreds of thousands of tons of this matter must have fallen.

"Odor of charred animal matter."

Or an aerial battle that occurred in inter-planetary space several hundred years ago—effect of time in making diverse remains uniform in appearance —

It's all very absurd because, even though we are told of a prodigious quantity of animal matter that fell from the sky—three days—France and Spain—we're not ready yet: that's all. M. Bouis says that this substance was not pollen; the vastness of the fall makes acceptable that it was not pollen; still, the resinous residue does suggest pollen of pine trees. We shall hear a great deal of a substance with a resinous residue that has fallen from the sky: finally we shall divorce it from all suggestion of pollen.

Blackwood's Magazine, 3-338:

A yellow powder that fell at Gerace, Calabria, March 14, 1813. Some of this substance was collected by Sig. Simenini, Professor of Chemistry, at Naples. It had an earthy, insipid taste, and is described as "unctuous." When heated, this matter turned brown, then black, then red. According to the *Annals of Philosophy, 11*-466, one of the components was a greenish-yellow substance, which, when dried, was found to be resinous.

But concomitants of this fall:

Loud noises were heard in the sky.

Stones fell from the sky.

According to Chladni, these concomitants occurred, and to me they seem —rather brutal?—or not associable with something so soft and gentle as a fall of pollen?

. . . . . .

Black rains and black snows—rains as black as a deluge of ink —jet-black snowflakes.

Such a rain as that which fell in Ireland, May 14, 1849, described in the *Annals of Scientific Discovery, 1*850, and the *Annual Register, 1*849. It fell upon a district of 400 square miles, and was the color of ink, and of a fetid odor and very disagreeable taste.

The rain at Castlecommon, Ireland, April 30, 1887—"thick, black rain." (*Amer. Met. four.*, 4-193.)

A black rain fell in Ireland, Oct. 8 and 9, 1907. (*Symons' Met. Mag.* 43-2.) "It left a most peculiar and disagreeable smell in the air."

The orthodox explanation of this rain occurs in *Nature*, March 2, 1908—cloud of soot that had come from South Wales, crossing the Irish Channel and all of Ireland.

So the black rain of Ireland, of March, 1898: ascribed in *Symons' Met. Mag.* 33-40, to clouds of soot from the manufacturing towns of North England and South Scotland.

Our Intermediatist principle of pseudo-logic, or our principle of Continuity is, of course, that nothing is unique, or individual: that all phenomena merge away into all other phenomena: that, for instance—suppose there should be vast celestial super-oceanic, or inter-planetary vessels that come near this earth and discharge volumes of smoke at times. We're only supposing such a thing as that now, because, conventionally, we are beginning modestly and tentatively. But if it were so, there would necessarily be some phenomenon upon this earth, with which that phenomenon would merge. Extra-mundane smoke and smoke from cities merge, or both would manifest in black precipitations in rain.

In Continuity, it is impossible to distinguish phenomena at their merging-points, so we look for them at their extremes. Impossible to distinguish between animal and vegetable in some infusoria—but hippopotamus and violet. For all practical purposes they're distinguishable enough. No one but a Barnum or a Bailey would send one a bunch of hippopotami as a token of regard.

So away from the great manufacturing centers:

Black rain in Switzerland, Jan. 20, 1911. Switzerland is so remote, and so ill at ease is the conventional explanation nere, that *Nature,* 85-451, says of this rain that in certain conditions of weather, snow may take on an appearance of blackness that is quite deceptive.

May be so. Or at night, if dark enough, snow may look black. This is simply denying that a black rain fell in Switzerland, Jan. 20, 1911.

Extreme remoteness from great manufacturing centers:

*La Nature, 1*888, 2-406:

That Aug. 14, 1888, there fell at the Cape of Good Hope, a rain so black as to be described as a "shower of ink."

Continuity dogs us. Continuity rules us and pulls us back. We seemed to have a little hope that by the method of extremes we could get away from things that merge indistinguishably into other things. We find that every departure from one merger is entrance upon another. At the Cape of Good Hope, vast volumes of smoke from great manufacturing centers, as an explanation, cannot very acceptably merge with the explanation of extra-mundane origin— but smoke from a terrestrial volcano can, and that is the suggestion that is made in *La Nature.*

There is, in human intellection, no real standard to judge by, but our acceptance, for the present, is that the more nearly positive will prevail. By the more nearly positive we mean the more nearly Organized. Everything merges away into everything else, but proportionately to its complexity, if unified, a thing seems strong, real, and distinct: so, in aesthetics, it is recognized that diversity in unity is higher beauty, or approximation to Beauty, than is simpler unity; so the logicians feel that agreement of diverse data constitute greater convincingness, or strength, than that of mere parallel instances: so to Herbert Spencer the more highly differentiated and integrated is the more fully evolved. Our opponents hold out for mundane origin of all black rains. Our method will be the presenting of diverse phenomena in agreement with the notion of some other origin. We take up not only black rains but black rains and their accompanying phenomena.

A correspondent to *Knowledge*, 5-190, writes of a black rain that fell in the Clyde Valley, March 1, 1884: of another black rain that fell two days later. According to the correspondent, a black rain had fallen in the Clyde Valley, March 20, 1828: then again March 22, 1828. According to *Nature*, 9-43, a black rain fell at Marls-ford, England, Sept. 4, 1873; more than twenty-four hours later another black rain fell in the same small town.

The black rains of Slains:

According to Rev. James Rust (*Scottish Showers):*

A black rain at Slains, Jan. 14, 1862—another at Carluke, 140 miles from Slains, May 1, 1862—at Slains, May 20, 1862—Slains, Oct. 28, 1863.

But after two of these showers, vast quantities of a substance described sometimes as "pumice stone," but sometimes as "slag," were washed upon the sea coast near Slains. A chemist's opinion is given that this substance was slag: that it was not a volcanic product: slag from smelting works. We now have, for black rains, a concomitant that is irreconcilable with origin from factory chimneys. Whatever it may have been the quantity of this substance was so enormous that, in Mr. Rust's opinion, to have produced so much of it would have required the united output of all the smelting works in the world. If slag it were, we accept that an artificial product has, in enormous quantities, fallen from the sky. If you don't think that such occurrences are damned by Science, read *Scottish Showers* and see how impossible it was for the author to have this matter taken up by the scientific world.

The first and second rains corresponded, in time, with ordinary ebullitions of Vesuvius.

The third and fourth, according to Mr. Rust, corresponded with no known volcanic activities upon this earth.

La Science Pour Tous, 11-26:

That, between October, 1863, and January, 1866, four more black rains fell at Slains, Scotland.

The writer of this supplementary account tells us, with a better, or more unscrupulous, orthodoxy than Mr. Rust's, that of the eight black rains, five coincided with eruptions of Vesuvius and three with eruptions of Etna.

The fate of all explanation is to close one door only to have another fly wide open. I should say that my own notions upon this subject will be considered irrational, but at least my gregarious-ness is satisfied in associating here with the preposterous—or this writer, and those who think in his rut, have to say that they can think of four discharges from one far-distant volcano, passing over a great part of Europe, precipitating nowhere else, discharging precisely over one small northern parish—

But also of three other discharges, from another far-distant volcano, showing the same precise preference, if not marksmanship, for one small parish in Scotland.

Nor would orthodoxy be any better off in thinking of exploding meteorites and their débris: preciseness and recurrence would be just as difficult to explain.

My own notion is of an island near an oceanic trade-route: it might receive débris from passing vessels seven times in four years.

Other concomitants of black rains:

In Timb's *Year Book*, 1851-270, there is an account of "a sort of rumbling, as of wagons, heard for upward of an hour without ceasing," July 16, 1850, Bulwick Rectory, Northampton, England. On the 19th, a black rain fell.

In *Nature*, 30-6, a correspondent writes of an intense darkness at Preston, England, April 26, 1884: page 32, another correspondent writes of black rain at Crowle, near Worcester. April 26: that a week later, or May 3, it had fallen again: another account of black rain, upon the 28th of April, near Church Shetton, so intense that the following day brooks were still dyed with it. According to four accounts by correspondents to *Nature* there were earthquakes in England at this time.

Or the black rain of Canada, Nov. 9, 1819. This time it is orthodoxy to attribute the black precipitate to smoke of forest fires south of the Ohio River—

Zurcher, *Meteors*, p. 238:

That this black rain was accompanied by "shocks like those of an earthquake."

Edinburgh Philosophical Journal, 2-381:

That the earthquake had occurred at the climax of intense darkness and the fall of black rain.

. . . . . .

Red rains.

Orthodoxy:

Sand blown by the sirocco, from the Sahara to Europe.

Especially in the earthquake regions of Europe, there have been many falls of red substance, usually, but not always, precipitated in rain. Upon many occasions, these substances have been "absolutely identified" as sand from the Sahara. When I first took this matter up, I came across assurance after assurance, so positive to this effect, that, had I not been an Intermediatist, I'd have looked no further. Samples collected from a rain at Genoa—samples of sand forwarded from the Sahara—"absolute

agreement" some writers said: same color, same particles of quartz, even the same shells of diatoms mixed in. Then the chemical analyses: not a disagreement worth mentioning.

Our intermediatist means of expression will be that, with proper exclusions, after the scientific or theological method, anything can be identified with anything else, if all things are only different expressions of an underlying oneness.

To many minds there's rest and there's satisfaction in that expression "absolutely identified." Absoluteness, or the illusion of it —the universal quest. If chemists have identified substances that have fallen in Europe as sand from African deserts, swept up in African whirlwinds, that's assuasive to all the irritations that occur to those cloistered minds that must repose in the concept of a snug, isolated, little world, free from contact with cosmic wickednesses, safe from stellar guile, undisturbed by inter-planetary prowlings and invasions. The only trouble is that a chemist's analysis, which seems so final and authoritative to some minds, is no more nearly absolute than is identification by a child or description by an imbecile—

I take some of that back: I accept that the approximation is higher—

But that it's based upon delusion, because there is no definiteness, no homogeneity, no stability, only different stages somewhere between them and indefiniteness, heterogeneity, and instability. There are no chemical elements. It seems acceptable that Ramsay and others have settled that. The chemical elements are only another disappointment in the quest for the positive, as the definite, the homogeneous, and the stable. If there were real elements, there could be a real science of chemistry.

Upon Nov. 12 and 13, 1902, occurred the greatest fall of matter in the history of Australia. Upon the 14th of November, it "rained mud," in Tasmania. It was of course attributed to Australian whirlwinds, but, according to the *Monthly Weather Review*, 32- 365, there was a haze all the way to the Philippines, also as far as Hong Kong. It may be that this phenomenon had no especial relation with the even more tremendous fall of matter that occurred in Europe, February, 1903.

For several days, the south of England was a dumping ground— from somewhere.

If you'd like to have a chemist's opinion, even though it's only a chemist's opinion, see the report of the meeting of the Royal Chemical Society, April 2, 1903. Mr. E. G. Clayton read a paper upon some of the

substance that had fallen from the sky, collected by him. The Sahara explanation applies mostly to falls that occur in southern Europe. Farther away, the conventionalists are a little uneasy: for instance, the editor of the *Monthly Weather Review,* 29-121, says of a red rain that fell near the coast of Newfoundland, early in 1890: “It would be very remarkable if this was Sahara dust.” Mr. Clayton said that the matter examined by him was “merely wind-borne dust from the roads and lanes of Wessex.” This opinion is typical of all scientific opinion—or theological opinion— or feminine opinion—all very well except for what it disregards. The most charitable thing I can think of—because I think it gives us a broader tone to relieve our malices with occasional charities— is that Mr. Clayton had not heard of the astonishing extent of this fall—had covered the Canary Islands, on the 19th, for instance. I think, myself, that in 1903, we passed through the remains of a powdered world—left over from an ancient inter-planetary dispute, brooding in space like a red resentment ever since. Or, like every other opinion, the notion of dust from Wessex turns into a provincial thing when we look it over.

To think is to conceive incompletely, because all thought relates only to the local. We metaphysicians, of course, like to have the notion that we think of the unthinkable.

As to opinions, or pronouncements, I should say, because they always have such an authoritative air, of other chemists, there is an analysis in *Nature,* 68-54, giving water and organic matter at 9.08 per cent. It’s that carrying out of fractions that’s so convincing. The substance is identified as sand from the Sahara.

The vastness of this fall. In *Nature,* 68-65, we are told that it had occurred in Ireland, too. The Sahara, of course—because, prior to February 19, there had been dust storms in the Sahara— disregarding that in that great region there’s always, in some part of it, a dust storm. However, just at present, it does look reasonable that dust had come from Africa, via the Canaries.

The great difficulty that authoritativeness has to contend with is some other authoritativeness. When an infallibility clashes with a pontification—

They explain.

Nature, March 5, 1903:

Another analysis—36 per cent organic matter.

Such disagreements don't look very well, so, in *Nature*, 68-109, one of the differing chemists explains. He says that his analysis was of muddy rain, and the other was of sediment of rain—

We're quite ready to accept excuses from the most high, though I do wonder whether we're quite so damned as we were, if we find ourselves in a gracious and tolerant mood toward the powers that condemn—but the tax that now comes upon our good manners and unwillingness to be too severe —

Nature, 68-223:

Another chemist. He says it was 23.49 per cent water and organic matter.

He "identifies" this matter as sand from an African desert—but after deducting organic matter—

But you and I could be "identified" as sand from an African desert, after deducting all there is to us except sand—

Why we cannot accept that this fall was of sand from the Sahara, omitting the obvious objection that in most parts the Sahara is not red at all, but is usually described as "dazzling white"—

The enormousness of it: that a whirlwind might have carried it, but that, in that case it would be no supposititious, or doubtfully identified whirlwind, but the greatest atmospheric cataclysm in the history of this earth:

Jour. Roy. Met. Soc., 30-56:

That, up to the 27th of February, this fall had continued in Belgium, Holland, Germany and Austria; that in some instances it was not sand, or that almost all the matter was organic: that a vessel had reported the fall as occurring in the Atlantic Ocean, midway between Southampton and the Barbados. The calculation is given that, in England alone, 10,000,000 tons of matter had fallen. It had fallen in Switzerland (*Symons' Met. Mag.*, March, 1903). It had fallen in Russia (*Bull. Com. Geolog.*, 22-48). Not only had a vast quantity of matter fallen several months before, in Australia, but it was at this time falling in Australia (*Victorian Naturalist*, June, 1903)—enormously—red mud—fifty tons per square mile.

The Wessex explanation—

Or that every explanation is a Wessex explanation: by that I mean an attempt to interpret the enormous in terms of the minute —but that nothing can be finally explained, because by Truth we mean the Universal; and that even if we could think as wide as Universality, that would not be requital to

the cosmic quest—which is not for Truth, but for the local that is true—not to universalize the local, but to localize the universal—or to give to a cosmic cloud absolute interpretation in terms of the little dusty roads and lanes of Wessex. I cannot conceive that this can be done: I think of high approximation.

Our Intermediatist concept is that, because of the continuity of all "things," which are not separate, positive, or real things, all pseudo-things partake of the underlying, or are only different expressions, degrees, or aspects of the underlying: so then that a sample from somewhere in anything must correspond with a sample from somewhere in anything else.

That, by due care in selection, and disregard for everything else, or the scientific and theological method, the substance that fell, February, 1903, could be identified with anything, or with some part or aspect of anything that could be conceived of—

With sand from the Sahara, sand from a barrel of sugar, or dust of your great-great-grandfather.

Different samples are described and listed in the *Journal of the Royal Meteorological Society,* 30-57—or we'll see whether my notion that a chemist could have identified some one of these samples as from anywhere conceivable, is extreme or not:

"Similar to brick dust," in one place; "buff or light brown," in

another place; "chocolate-colored and silky to the touch and slightly iridescent"; "gray"; "red-rust color"; "reddish raindrops and gray sand"; "dirty gray"; "quite red"; "yellow-brown, with a tinge of pink"; "deep yellow-clay color."

In *Nature,* it is described as of a peculiar yellowish cast in one place, reddish somewhere else, and salmon-colored in another place.

Or there could be real science if there were really anything to be scientific about.

Or the science of chemistry is like a science of sociology, prejudiced in advance, because only to see is to see with a prejudice, setting out to "prove" that all inhabitants of New York came from Africa.

Very easy matter. Samples from one part of town. Disregard for all the rest.

There is no science but Wessex-science.

According to our acceptance, there should be no other, but that approximation should be higher: that metaphysics is super-evil: that the

scientific spirit is of the cosmic quest.

Our notion is that, in a real existence, such a quasi-system of fables as the science of chemistry could not deceive for a moment: but that in an "existence" endeavoring to become real, it represents that endeavor, and will continue to impose its pseudo-positiveness until it be driven out by a higher approximation to realness;

That the science of chemistry is as impositive as fortune-telling—

Or no—

That, though it represents a higher approximation to realness than does alchemy, for instance, and so drove out alchemy, it is still only somewhere between myth and positiveness.

The attempt at realness, or to state a real and unmodified fact here, is the statement:

All red rains are colored by sands from the Sahara Desert.

My own impositivist acceptances are:

That some red rains are colored by sands from the Sahara Desert;

Some by sands from other terrestrial sources;

Some by sands from other worlds, or from their deserts—also from aerial regions too indefinite or amorphous to be thought of as "worlds" or planets —

That no supposititious whirlwind can account for the hundreds of millions of tons of matter that fell upon Australia, Pacific Ocean and Atlantic Ocean and Europe in 1902 and 1903—that a whirl-wind that could do that would not be supposititious.

But now we shall cast off some of our own wessicality by accepting that there have been falls of red substance other than sand.

We regard every science as an expression of the attempt to be real. But to be real is to localize the universaI—or to make some one thing as wide as all things—successful accomplishment of which I cannot conceive of. The prime resistance to this endeavor is the refusal of the rest of the universe to be damned, excluded, disregarded, to receive Christian Science treatment, by something else so attempting. Although all phenomena are striving for the Absolute—or have surrendered to and have incorporated themselves in higher attempts, simply to be phenomenal, or to have seeming in Intermediateness is to express relations.

A river.

It is water expressing the gravitational relation of different levels.

The water of the river.

Expression of chemic relations of hydrogen and oxygen—which are not final.

A city.

Manifestation of commercial and social relations.

How could a mountain be without base in a greater body?

Storekeeper live without customers?

The prime resistance to the positivist attempt by Science is its relations with other phenomena, or that it only expresses those relations in the first place. Or that a Science can have seeming, or survive in Intermediateness, as something pure, isolated, positively different, no more than could a river or a city or a mountain or a store.

This Intermediateness-wide attempt by parts to be wholes—which cannot be realized in our quasi-state, if we accept that in it the co-existence of two or more wholes or universals is impossible— high approximation to which, however, may be thinkable—

Scientists and their dream of “pure science.”

Artists and their dream of “art for art’s sake.”

It is our notion that if they could almost realize, that would be almost realness: that they would instantly be translated into real existence. Such thinkers are good positivists, but they are evil in an economic and sociologic sense, if, in that sense, nothing has justification for being, unless it serve, or function for, or express the relations of, some higher aggregate. So Science functions for and serves society at large, and would, from society at large, receive no support, unless it did so divert itself or dissipate and prostitute itself. It seems that by prostitution I mean usefulness.

There have been red rains that, in the middle ages, were called “rains of blood.” Such rains terrified many persons, and were so unsettling to large populations, that Science, in its sociologic relations, has sought, by Mrs. Eddy’s method, to remove an evil—

That “rains of blood” do not exist;

That rains so called are only of water colored by sand from the Sahara Desert.

My own acceptance is that such assurances, whether fictitious or not, whether the Sahara is a “dazzling white” desert or not, have wrought such good effects, in a sociologic sense, even though prosti-tutional in the positivist sense, that, in the sociologie sense, they were well justified;

But that we've gone on: that this is the twentieth century; that most of us have grown up so that such soporifics of the past are no longer necessary:

That if gushes of blood should fall from the sky upon New York City, business would go on as usual.

We began with rains that we accepted ourselves were, most likely, only of sand. In my own still immature hereticalness—and by heresy, or progress, I mean, very largely, a return, though with many modifications, to the superstitions of the past, I think I feel considerable aloofness to the idea of rains of blood. Just at present, it is my conservative, or timid purpose, to express only that there have been red rains that very strongly suggest blood or finely divided animal matter—

Débris from inter-planetary disasters.

Aerial battles.

Food-supplies from cargoes of super-vessels, wrecked in interplanetary traffic.

There was a red rain in the Mediterranean region, March 6, 1888. Twelve days later, it fell again. Whatever this substance may have been, when burned, the odor of animal matter from it was strong and persistent. (*L'Astronomie, 1*888-205.)

But—infinite heterogeneity—or débris from many different kinds of aerial cargoes—there have been red rains that have been colored by neither sand nor animal matter.

*Annals of Philosophy, 1*6-226:

That, Nov. 2, 1819—week before the black rain and earthquake of Canada—there fell, at Blankenberge, Holland, a red rain. As to sand, two chemists of Bruges concentrated 144 ounces of the rain to 4 ounces—"no precipitate fell." But the color was so marked that had there been sand, it would have been deposited, if the substance had been diluted instead of concentrated. Experiments were made, and various reagents did cast precipitates, but other than sand. The chemists concluded that the rain-water contained muriate of cobalt—which is not very enlightening: that could be said of many substances carried in vessels upon the Atlantic Ocean. Whatever it may have been, in the *Annales de Chimie,* 2-12-432, its color is said to have been red-violet. For various chemic reactions, see *Quar. Jour. Roy. Inst.,* 9-202, and *Edin. Phil. Jour.,* 2-381.

Something that fell with dust said to have been meteoric, March 9, 10, 11, 1872: described in the *Chemical News,* 25-300, as a "peculiar

substance," consisted of red iron ocher, carbonate of lime, and organic matter.

Orange-red hail, March 14, 1873, in Tuscany. (*Notes and Queries* 9-5-16.)

Rain of lavender-colored substance, at Oudon, France, Dec. 19, 1903. (*Bull. Soc. Met. de France, 1*904-124.)

*La Nature, 1*885-2-351:

That, according to Prof. Schwedoff, there fell, in Russia, June 14, 1880, red hailstones, also blue hailstones, also gray hailstones.

Nature, 34-123:

A correspondent writes that he had been told by a resident of a small town in Venezuela, that there, April 17, 1886, had fallen hailstones, some red, some blue, some whitish: informant said to have been one unlikely ever to have heard of the Russian phenomenon; described as an "honest, plain countryman."

Nature, July 5, 1877, quotes a Roman correspondent to the London *Times* who sent a translation from an Italian newspaper: that a red rain had fallen in Italy, June 23, 1877, containing "microscopically small particles of sand."

Or, according to our acceptance, any other story would have been an evil thing, in the sociologic sense, in Italy, in 1877. But the English correspondent, from a land where terrifying red rains are uncommon, does not feel this necessity. He writes: "I am by no means satisfied that the rain was of sand and water." His observations are that drops of this rain left stains "such as sandy water could not leave." He notes that when the water evaporated, no sand was left behind.

*L'Année Scientifique, 1*888-75:

That, Dec. 13, 1887, there fell, in Cochin China, a substance like blood, somewhat coagulated.

Annales de Chimie, 85-266:

That a thick, viscous, red matter fell at Ulm, in 1812.

We now have a datum with a factor that has been foreshadowed; which will recur and recur and recur throughout this book. It is a factor that makes for speculation so revolutionary that it will have to be reinforced many times before we can take it into full acceptance.

*Year Book of Facts, 1*861-273:

Quotation from a letter from Prof. Campini to Prof. Matteucci:

That, upon Dec. 28, 1860, at about 7 A.M., in the northwestern part of Siena, a reddish rain fell copiously for two hours.

A second red shower fell at 11 o'clock.

Three days later, the red rain fell again.

The next day another red rain fell.

Still more extraordinarily:

Each fall occurred in "exactly the same quarter of town."

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IT is in the records of the French Academy that, upon March 17, 1669, in the town of Châtillon-sur-Seine, fell a reddish substance that was “thick, viscous, and putrid.”

American Journal of Science, 1-41-404:

Story of a highly unpleasant substance that had fallen from the sky, in Wilson County, Tennessee. We read that Dr. Troost visited the place and investigated. Later we’re going to investigate some investigations—but never mind that now. Dr. Troost reported that the substance was clear blood and portions of flesh scattered upon tobacco fields. He argued that a whirlwind might have taken an animal up from one place, mauled it around, and have precipitated its remains somewhere else.

But, in volume 44, page 216, of the *Journal,* there is an apology. The whole matter is, upon newspaper authority, said to have been a hoax by Negroes, who had pretended to have seen the shower, for the sake of practicing upon the credulity of their masters: that they had scattered the decaying flesh of a dead hog over the tobacco fields.

If we don’t accept this datum, at least we see the sociologically necessary determination to have all falls accredited to earthly origins —even when they’re falls that don’t fall.

*Annual Register, 1*821-687:

That, upon the 13th of August, 1819, something had fallen from the sky at Amherst, Mass. It had been examined and described by Prof. Graves, formerly lecturer at Dartmouth College. It was an object that had upon it a nap, similar to that of milled cloth. Upon removing this nap, a buff-colored, pulpy substance was found. It had an offensive odor, and, upon exposure to the air, turned to a vivid red. This thing was said to have fallen with a brilliant light.

Also see the *Edinburgh Philosophical Journal,* 5-295. In the *Annales de Chimie*, 1821-67, M. Arago accepts the datum, and gives four instances of similar objects or substances said to have fallen from the sky, two of which

we shall have with our data of gelatinous, or viscous matter, and two of which I omit, because it seems to me that the dates given are too far back.

In the *American Journal of Science*, 1-2-335, is Professor Graves' account, communicated by Professor Dewey:

That, upon the evening of August 13, 1819, a light was seen in Amherst —a falling object—sound as if of an explosion.

In the home of Prof. Dewey, this light was reflected upon a wall of a room in which were several members of Prof. Dewey's family.

The next morning, in Prof. Dewey's front yard, in what is said to have been the only position from which the light that had been seen in the room, the night before, could have been reflected, was found a substance "unlike anything before observed by anyone who saw it." It was a bowl-shaped object, about 8 inches in diameter, and one inch thick. Bright buff-colored, and having upon it a "fine nap." Upon removing this covering, a buff-colored, pulpy substance of the consistency of soft-soap, was found—"of an offensive, suffocating smell."

A few minutes of exposure to the air changed the buff color to "a livid color resembling venous blood." It absorbed moisture quickly from the air and liquefied. For some of the chemic reactions, see the *Journal.*

There's another lost quasi-soul of a datum that seems to me to belong here:

London *Times*, April 19, 1836:

Fall of fish that had occurred in the neighborhood of Allahabad, India. It is said that the fish were of the chalwa species, about a span in length and a seer in weight—you know.

They were dead and dry.

Or they had been such a long time out of water that we can't accept that they had been scooped out of a pond, by a whirlwind— even though they were so definitely identified as of a known local species—

Or they were not fish at all.

I incline, myself, to the acceptance that they were not fish, but slender, fish-shaped objects of the same substance as that which fell at Amherst—it is said that, whatever they were, they could not be eaten: that "in the pan, they turned to blood."

For details of this story see the *Journal of the Asiatic Society of Bengal, 1*834-307. May 16 or 17, 1834, is the date given in the *Journal.*

In the *American Journal of Science*, 1-25-362, occurs the inevitable damnation of the Amherst object:

Prof. Edward Hitchcock went to live in Amherst. He says that years later, another object, like the one said to have fallen in 1819, had been found at "nearly the same place." Prof. Hitchcock was invited by Prof. Graves to examine it. Exactly like the first one. Corresponded in size and color and consistency. The chemic reactions were the same.

Prof. Hitchcock recognized it in a moment.

It was a gelatinous fungus.

He did not satisfy himself as to just the exact species it belonged to, but he predicted that similar fungi might spring up within twenty-four hours—

But, before evening, two others sprang up.

Or we've arrived at one of the oldest of the exclusionists' conventions—or nostoc. We shall have many data of gelatinous substance said to have fallen from the sky: almost always the exclusionists argue that it was only nostoc, an Alga, or, in some respects, a fungous growth. The rival convention is "spawn of frogs or of fishes." These two conventions have made a strong combination. In instances where testimony was not convincing that gelatinous matter had been seen to fall, it was said that the gelatinous substance was nostoc, and had been upon the ground in the first place: when the testimony was too good that it had fallen, it was said to be spawn that had been carried from one place to another in a whirl-wind.

Now, I can't say that nostoc is always greenish, any more than I can say that blackbirds are always black, having seen a white one: we shall quote a scientist who knew of flesh-colored nostoc, when so to know was convenient. When we come to reported falls of gelatinous substances, I'd like it to be noticed how often they are described as whitish or grayish. In looking up the subject, myself, I have read only of greenish nostoc. Said to be greenish, in Webster's Dictionary—said to be "blue-green" in the New International Encyclopedia—"from bright green to olive-green" (*Science Gossip*, 10-114); "green" (*Science Gossip*, 7-260); "greenish" (*Notes and Queries*, 1-11-219). It would seem acceptable that, if many reports of white birds should occur, the birds are not blackbirds, even though there have been white blackbirds. Or that, if often reported, grayish or whitish gelatinous substance is not nostoc, and is not spawn if occurring in times unseasonable for spawn.

"The Kentucky Phenomenon."

So it was called, in its day, and now we have an occurrence that attracted a great deal of attention in its own time. Usually these things of the accursed have been hushed up or disregarded—suppressed like the seven black rains of Slains—but, upon March 3, 1876, something occurred, in Bath County, Kentucky, that brought many newspaper correspondents to the scene.

The substance that looked like beef that fell from the sky.

Upon March 3, 1876, at Olympian Springs, Bath County, Kentucky, flakes of a substance that looked like beef fell from the sky —"from a clear sky." We'd like to emphasize that it was said that nothing but this falling substance was visible in the sky. It fell in flakes of various sizes; some two inches square, one, three or four inches square. The flake-formation is interesting: later we shall think of it as signifying pressure—somewhere. It was a thick shower, on the ground, on trees, on fences, but it was narrowly localized: or upon a strip of land about 100 yards long and about 50 yards wide. For the first account, see the *Scientific American,* 34-197, and the *New York Times,* March 10, 1876.

Then the exclusionists.

Something that looked like beef: one flake of it the size of a square envelope.

If we think of how hard the exclusionists have fought to reject the coming of ordinary-looking dust from this earth's externality, we can sympathize with them in this sensational instance, perhaps. Newspaper correspondents wrote broadcast and witnesses were quoted, and this time there is no mention of a hoax, and, except by one scientist, there is no denial that the fall did take place.

It seems to me that the exclusionists are still more emphatically conservators. It is not so much that they are inimical to all data of externally derived substances that fall upon this earth, as that they are inimical to all data discordant with a system that does not include such phenomena—

Or the spirit or hope or ambition of the cosmos, which we call attempted positivism: not to find out the new; not to add to what is called knowledge, but to systematize.

Scientific American Supplement, 2-426:

That the substance reported from Kentucky had been examined by Leopold Brandeis.

“At last we have a proper explanation of this much talked of phenomenon.”

“It has been comparatively easy to identify the substance and to fix its status. The Kentucky ‘wonder’ is no more or less than nostoc.”

Or that it had not fallen; that it had been upon the ground in the first place, and had swollen in rain, and, attracting attention by greatly increased volume, had been supposed by unscientific observers to have fallen in rain —

What rain, I don’t know.

Also it is spoken of as “dried” several times. That’s one of the most important of the details.

But the relief of outraged propriety, expressed in the *Supplement*, is amusing to some of us, who, I fear, may be a little improper at times. Very spirit of the Salvation Army, when some third-rate scientist comes out with an explanation of the vermiform appendix or the os coccygis that would have been acceptable to Moses. To give completeness to “the proper explanation,” it is said that Mr. Brandeis had identified the substance as “flesh-colored” nostoc.

Prof. Lawrence Smith, of Kentucky, one of the most resolute of the exclusionists:

New York Times, March 12, 1876:

That the substance had been examined and analyzed by Prof. Smith, according to whom it gave every indication of being the “dried” spawn of some reptile, “doubtless of the frog”—or up from one place and down in another. As to “dried,” that may refer to condition when Prof. Smith received it.

In the *Scientific American Supplement*, 2-473, Dr. A. Mead Edwards, President of the Newark Scientific Association, writes that, when he saw Mr. Brandeis’ communication, his feeling was of conviction that propriety had been re-established, or that the problem had been solved, as he expresses it: knowing Mr. Brandeis well, he had called upon that upholder of respectability, to see the substance that had been identified as nostoc. But he had also called upon Dr. Hamilton, who had a specimen, and Dr. Hamilton had declared it to be lung-tissue. Dr. Edwards writes of the substance that had so completely, or beautifully—if beauty is completeness —been identified as nostoc— “It turned out to be lung tissue also.” He wrote to other persons who had specimens, and identified other specimens

as masses of cartilage or muscular fibers. “As to whence it came, I have no theory.” Nevertheless he endorses the local explanation— and a bizarre thing it is:

A flock of gorged, heavy-weighted buzzards, but far up and invisible in the clear sky—

They had disgorged.

Prof. Fassig lists the substance, in his “Bibliography,” as fish spawn. McAtee (*Monthly Weather Review,* May, 1918) lists it as a jelly-like material, supposed to have been the “dried” spawn either of fishes or of some batrachian.

Or this is why, against the seemingly insuperable odds against all things new, there can be what is called progress—

That nothing is positive, in the aspects of homogeneity and unity:

If the whole world should seem to combine against you, it is only unreal combination, or intermediateness to unity and disunity. Every resistance is itself divided into parts resisting one another. The simplest strategy seems to be—never bother to fight a thing: set its own parts fighting one another.

We are merging away from carnal to gelatinous substance, and here there is an abundance of instances or reports of instances. These data are so improper they’re obscene to the science of today, but we shall see that science, before it became so rigorous, was not so prudish. Chladni was not, and Greg was not.

I shall have to accept, myself, that gelatinous substance has often fallen from the sky—

Or that, far up, or far away, the whole sky is gelatinous?

That meteors tear through and detach fragments?

That fragments are brought down by storms?

That the twinkling of stars is penetration of light through something that quivers?

I think, myself, that it would be absurd to say that the whole sky is gelatinous: it seems more acceptable that only certain areas are.

Humboldt (*Cosmos, 1*-119) says that all our data in this respect must be “classed amongst the mythical fables of mythology.” He is very sure, but just a little redundant.

We shall be opposed by the standard resistances:

There in the first place;

Up from one place, in a whirlwind, and down in another.

We shall not bother to be very convincing one way or another, because of the over-shadowing of the datum with which we shall end up. It will mean that something had been in a stationary position for several days over a small part of a small town in England: this is the revolutionary thing that we have alluded to before; whether the substance were nostoc, or spawn, or some kind of a larval nexus, doesn't matter so much. If it stood in the sky for several days, we rank with Moses as a chronicler of improprieties—or was that story, or datum, we mean, told by Moses? Then we shall have so many records of gelatinous substance said to have fallen with meteorites, that, between the two phenomena, some of us will have to accept connection—or that there are at least vast gelatinous areas aloft, and that meteorites tear through, carrying down some of the substance.

Comptes Rendus, 3-554:

That, in 1836, M. Vallot, member of the French Academy, placed before the Academy some fragments of a gelatinous substance, said to have fallen from the sky, and asked that they be analyzed. There is no further allusion to this subject.

Comptes Rendus, 23-542:

That, in Wilna, Lithuania, April 4, 1846, in a rainstorm, fell nut-sized masses of a substance that is described as both resinous and gelatinous. It was odorless until burned: then it spread a very pronounced sweetish odor. It is described as like gelatine, but much firmer: but, having been in water 24 hours, it swelled out, and looked altogether gelatinous—

It was grayish.

We are told that, in 1841 and 1846, a similar substance had fallen in Asia Minor.

In *Notes and Queries*, 8-6-190, it is said that, early in August, 1894, thousands of jellyfish, about the size of a shilling, had fallen at Bath, England. I think it is not acceptable that they were jellyfish: but it does look as if this time frog spawn did fall from the sky, and may have been translated by a whirlwind—because, at the same time, small frogs fell at Wigan, England.

Nature, 87-10:

That, June 24, 1911, at Eton, Bucks, England, the ground was found covered with masses of jelly, the size of peas, after a heavy rainfall. We are not told of nostoc, this time: it is said that the object contained numerous eggs of "some species of Chironomus, from which larvae soon emerged."

I incline, then, to think that the objects that fell at Bath were neither jellyfish nor masses of frog spawn, but something of a larval kind—

This is what had occurred at Bath, England, 23 years before.

London *Times*, April 24, 1871:

That, upon the 22nd of April, 1871, a storm of glutinous drops neither jellyfish nor masses of frog spawn, but something of a [line missing here in original text. Ed.]

railroad station, at Bath. "Many soon developed into a worm like chrysalis, about an inch in length." The account of this occurrence in the *Zoologist*, 2-6-2686, is more like the Eton-datum: of minute forms, said to have been infusoria; not forms about an inch in length.

Trans. Ent. Soc. of London, 1871-proc. xxii:

That the phenomenon has been investigated by the Rev. L. Jenyns, of Bath. His description is of minute worms in filmy envelopes. He tries to account for their segregation. The mystery of it is: What could have brought so many of them together? Many other falls we shall have record of, and in most of them segregation is the great mystery. A whirlwind seems anything but a segregative force. Segregation of things that have fallen from the sky has been avoided as most deep-dyed of the damned. Mr. Jenyns conceives of a large pool, in which were many of these spherical masses: of the pool drying up and concentrating all in a small area; of a whirl-wind then scooping all up together—

But several days later, more of these objects fell in the same place.

That such marksmanship is not attributable to whirlwinds seems to me to be what we think we mean by common sense:

It may not look like common sense to say that these things had been stationary over the town of Bath, several days—

The seven black rains of Slains;

The four red rains of Siena.

An interesting sidelight on the mechanics of orthodoxy is that Mr. Jenyns dutifully records the second fall, but ignores it in his explanation.

R. P. Greg, one of the most notable of cataloguers of meteoritic phenomena, records (*Phil. Mag.:* 4-8-463) falls of viscid substance in the years 1652, 1686, 1718, 1796, 1811, 1819, 1844. He gives earlier dates, but I practice exclusions, myself. In the *Report of the British Association, 1*860-63, Greg records a meteor that seemed to pass near the ground, between

Barsdorf and Freiburg, Germany: the next day a jelly-like mass was found in the snow—

Unseasonableness for either spawn or nostoc.

Greg's comment in this instance is: "Curious if true." But he records without modification the fall of a meteorite at Gotha, Germany, Sept. 6, 1835, "leaving a jelly-like mass on the ground." We are told that this substance fell only three feet away from an observer. In the *Report of the British Association, 1*855-94, according to a letter from Greg to Prof. Baden-Powell, at night, Oct. 8, 1844, near Coblenz, a German, who was known to Greg, and another person saw a luminous body fall close to them. They returned next morning and found a gelatinous mass of grayish color.

According to Chladni's account (*Annals of Philosophy,* n.s., 12-94) a viscous mass fell with a luminous meteorite between Siena and Rome, May, 1652; viscous matter found after the fall of a fire ball, in Lusatia, March, 1796; fall of a gelatinous substance, after the explosion of a meteorite, near Heidelberg, July, 1811. In the *Edinburgh Philosophical Journal*, 1-234, the substance that fell at Lusatia is said to have been of the "color and odor of dried, brown varnish." In the *Amer. Jour. Sci.,* 1-26-133, it is said that gelatinous matter fell with a globe of fire, upon the island of Lethy, India, 1718.

In the *Amer. Jour. Sci.,* 1-26-396, in many observations upon the meteors of November, 1833, are reports of falls of gelatinous substance:

That, according to newspaper reports, "lumps of jelly" were found on the ground at Rahway, N. J. The substance was whitish, or resembled the coagulated white of an egg;

That Mr. H. H. Garland, of Nelson County, Virginia, had found a jelly-like substance of about the circumference of a twenty-five-cent piece;

That, according to a communication from A. C. Twining to Prof. Olmstead, a woman at West Point, N. Y., had seen a mass the size of a teacup. It looked like boiled starch;

That, according to a newspaper, of Newark, N. J., a mass of gelatinous substance, like soft soap, had been found. "It possessed little elasticity, and, on the application of heat, it evaporated as readily as water."

It seems incredible that a scientist would have such hardihood, or infidelity, as to accept that these things had fallen from the sky: nevertheless, Prof. Olmstead, who collected these lost souls, says:

“The fact that the supposed deposits were so uniformly described as gelatinous substance forms a presumption in favor of the supposition that they had the origin ascribed to them.”

In contemporaneous scientific publications considerable attention was given to Prof. Olmstead’s series of papers upon this subject of the November meteors. You will not find one mention of the part that treats of gelatinous matter.

5

I SHALL attempt not much of correlation of dates. A mathematic-minded positivist, with his delusion that in an intermediate state twice two are four, whereas, if we accept Continuity, we cannot accept that there are anywhere two things to start with, would search our data for periodicities. It is so obvious to me that the mathematic, or the regular, is the attribute of the Universal, that I have not much inclination to look for it in the local. Still, in this solar system, "as a whole," there is considerable approximation to regularity; or the mathematic is so nearly localized that eclipses, for instance, can, with rather high approximation, be foretold, though I have notes that would deflate a little the astronomers' vainglory in this respect—or would if that were possible. An astronomer is poorly paid, uncheered by crowds, considerably isolated: he lives upon his own inflations: deflate a bear and it couldn't hibernate. This solar system is like every other phenomenon that can be regarded "as a whole"—or the affairs of a ward are interfered with by the affairs of the city of which it is a part; city by county; county by state; state by nation; nation by other nations; all nations by climatic conditions; climatic conditions by solar circumstances; sun by general planetary circumstances; solar system "as a whole" by other solar systems—so the hopelessness of finding the phenomena of entirety in the ward of a city. But positivists are those who try to find the unrelated in the ward of a city. In our acceptance this is the spirit of cosmic religion. Objectively the state is not realizable in the ward of a city. But, if a positivist could bring himself to absolute belief that he had found it, that would be a subjective realization of that which is unrealizable objectively. Of course we do not draw a positive line between the objective and the subjective—or that all phenomena called things or persons are subjective within one all-inclusive nexus, and that thoughts within those that are commonly called "persons" are sub-subjective. It is rather as if Intermediateness strove for Regularity in this solar system and failed: then generated the mentality of astronomers, and, in that secondary expression, strove for conviction that failure had been success.

I have tabulated all the data of this book, and a great deal besides—card system—and several proximities, thus emphasized, have been revelations to me: nevertheless, it is only the method of theologians and scientists—worst of all, of statisticians.

For instance, by the statistic method, I could "prove" that a black rain has fallen "regularly" every seven months, somewhere upon this earth. To do this, I'd have to include red rains and yellow rains, but, conventionally, I'd pick out the black particles in red substances and in yellow substances, and disregard the rest. Then, too, if here and there a black rain should be a week early or a month late—that would be "acceleration" or "retardation." This is supposed to be legitimate in working out the periodicities of comets. If black rains, or red or yellow rains with black particles in them, should not appear at all near some dates—we have not read Darwin in vain—"the records are not complete." As to other, interfering black rains, they'd be either gray or brown, or for them we'd find other periodicities.

Still, I have had to notice the year 1819, for instance. I shall not note them all in this book, but I have records of 31 extraordinary events in 1883. Someone should write a book upon the phenomena of this one year—that is, if books should be written. 1849 is notable for extraordinary falls, so far apart that a local explanation seems inadequate—not only the black rain of Ireland, May, 1849, but a red rain in Sicily and a red rain in Wales. Also, it is said (Timb's *Year Book*, *1*850-241) that, upon April 18 or 20, 1849, shepherds near Mt. Ararat, found a substance that was not indigenous, upon areas measuring 8 to 10 miles in circumference. Presumably it had fallen there.

We have already gone into the subject of Science and its attempted positiveness, and its resistances in that it must have relations of service. It is very easy to see that most of the theoretic science of the 19th century was only a relation of reaction against theologic dogma, and has no more to do with Truth than has a wave that bounds back from a shore. Or, if a shop girl, or you or I, should pull out a piece of chewing gum about a yard long, that would be quite as scientific a performance as was the stretching of this earth's age several hundred millions of years.

All "things" are not things, but only relations, or expressions of relations: but all relations are striving to be the unrelated, or have surrendered to, and subordinated to, higher attempts. So there is a positivist aspect to this reaction that is itself only a relation, and that is the attempt to assimilate all

phenomena under the materialist explanation, or to formulate a final, all-inclusive system, upon the materialist basis. If this attempt could be realized, that would be the attaining of realness; but this attempt can be made only by disregarding psychic phenomena, for instance—or, if science shall eventually give in to the psychic, it would be no more legitimate to explain the immaterial in terms of the material than to explain the material in terms of the immaterial. Our own acceptance is that material and immaterial are of a oneness, merging, for instance, in a thought that is continuous with a physical action: that oneness cannot be explained, because the process of explaining is the interpreting of something in terms of something else. All explanation is assimilation of something in terms of something else that has been taken as a basis: but, in Continuity, there is nothing that is any more basic than anything else—unless we think that delusion built upon delusion is less real than its pseudo-foundation.

In 1829 (Timb's *Year Book, 1*848-235) in Persia fell a substance that the people said they had never seen before. As to what it was, they had not a notion, but they saw that the sheep ate it. They ground it into flour and made bread, said to have been passable enough, though insipid.

That was a chance that science did not neglect. Manna was placed upon a reasonable basis, or was assimilated and reconciled with the system that had ousted the older—and less nearly real—system. It was said that, likely enough, manna had fallen in ancient times— because it was still falling—but that there was no tutelary influence behind it—that it was a lichen from the steppes of Asia Minor— "up from one place in a whirlwind and down in another place." In the *American Almanac, 1*833-71, it is said that this substance— "unknown to the inhabitants of the region"—was "immediately recognized" by scientists who examined it: and that "the chemical analysis also identified it as a lichen."

This was back in the days when Chemical Analysis was a god. Since then his devotees have been shocked and disillusioned. Just how a chemical analysis could so botanize, I don't know—but it was Chemical Analysis who spoke, and spoke dogmatically. It seems to me that the ignorance of inhabitants, contrasting with the local knowledge of foreign scientists, is overdone: if there's anything good to eat, within any distance conveniently covered by a whirlwind— inhabitants know it. I have data of other falls, in Persia and Asiatic Turkey, of edible substances. They are all dogmatically said to be "manna"; and "manna" is dogmatically said to be a species of

lichens from the steppes of Asia Minor. The position that I take is that this explanation was evolved in ignorance of the fall of vegetable substances, or edible substances, in other parts of the world: that it is the familiar attempt to explain the general in terms of the local; that, if we shall have data of falls of vegetable substance, in, say, Canada or India, they were not of lichens from the steppes of Asia Minor; that, though all falls in Asiatic Turkey and Persia are sweepingly and conveniently called showers of "manna," they have not been even all of the same substance. In one instance the particles are said to have been "seeds." Though, in *Comptes Rendus,* the substance that fell in 1841 and 1846 is said to have been gelatinous, in the *Bull. Sci. Nat. de Neuchatel,* it is said to have been of something, in lumps the size of a filbert, that had been ground into flour; that of this flour had been made bread, very attractive looking, but flavorless.

The great difficulty is to explain segregation in these showers—

But deep-sea fishes and occasional falls, down to them, of edible substances; bags of grain, barrels of sugar; things that had not been whirled up from one part of the ocean-bottom, in storms or submarine disturbances, and dropped somewhere else—

I suppose one thinks—but grain in bags never has fallen—

Object of Amherst—its covering like "milled cloth"—

Or barrels of corn lost from a vessel would not sink—but a host of them clashing together, after a wreck—they burst open; the corn sinks, or does when saturated; the barrel staves float longer—

If there be not an overhead traffic in commodities similar to our own commodities carried over this earth's oceans—I'm not the deep sea fish I think I am.

I have no data other than the mere suggestion of the Amherst object of bags or barrels, but my notion is that bags and barrels from a wreck on one of this earth's oceans, would, by the time they reached the bottom, no longer be recognizable as bags or barrels; that, if we can have data of the fall of fibrous material that may have been cloth or paper or wood, we shall be satisfactory and grotesque enough.

Proc. Roy. Irish Acad., 1-379:

"In the year 1686, some workmen, who had been fetching water from a pond, seven German miles from Memel, on returning to their work after dinner (during which there had been a snow-storm) found the flat ground

around the pond covered with a coal-black, leafy mass; and a person who lived near said he had seen it fall like flakes with the snow."

Some of these flake-like formations were as large as a table-top.

"The mass was damp and smelt disagreeably, like rotten seaweed, but, when dried, the smell went off."

"It tore fibrously, like paper."

Classic explanation:

"Up from one place, and down in another."

But what went up, from one place, in a whirlwind? Of course, our Intermediatist acceptance is that had this been the strangest substance conceivable, from the strangest other world that could be thought of; somewhere upon this earth there must be a substance similar to it, or from which it would, at least subjectively, or according to description, not be easily distinguishable. Or that everything in New York City is only another degree or aspect of something, or combination of things, in a village of Central Africa. The novel is a challenge to vulgarization: write something that looks new to you: someone will point out that the thrice-accursed Greeks said it long ago. Existence is Appetite: the gnaw of being; the one attempt of all things to assimilate all other things, if they have not surrendered and submitted to some higher attempt. It was cosmic that these scientists, who had surrendered to and submitted to the Scientific System, should, consistently with the principles of that system, attempt to assimilate the substance that fell at Memel with some known terrestrial product. At the meeting of the Royal Irish Academy it was brought out that there is a substance, of rather rare occurrence, that has been known to form in thin sheets upon marsh land.

It looks like greenish felt.

The substance of Memel:

Damp, coal-black, leafy mass.

But, if broken up, the marsh-substance is flake-like, and it tears fibrously.

An elephant can be identified as a sunflower—both have long stems. A camel is indistinguishable from a peanut—if only their humps be considered.

Trouble with this book is that we'll end up a lot of intellectual roués: we'll be incapable of being astonished with anything. We knew, to start with, that science and imbecility are continuous; nevertheless so many expressions of the merging-point are at first startling. We did think that

Prof. Hitchcock's performance in identifying the Amherst phenomenon as a fungus was rather notable as scientific vaudeville, if we acquit him of the charge of seriousness—or that, in a place where fungi were so common that, before a given evening two of them sprang up, only he, a stranger in this very fungiferous place, knew a fungus when he saw something like a fungus—if we disregard its quick liquefaction, for instance. It was only a monologue, however: now we have an all-star cast: and they're not only Irish; they're royal Irish.

The royal Irishmen excluded "coal-blackness" and included fibrousness: so then that this substance was "marsh paper," which "had been raised into the air by storms of wind, and had again fallen."

Second act:

It was said that, according to M. Ehrenberg, "the meteor-paper was found to consist partly of vegetable matter, chiefly of conifervaœ."

Third act:

Meeting of the royal Irishmen: chairs, tables, Irishmen:

Some flakes of marsh-paper were exhibited.

Their composition was chiefly of conifervaœ.

This was a double inclusion: or it's the method of agreement that logicians make so much of. So no logician would be satisfied with identifying a peanut as a camel, because both have humps: he demands accessory agreement—that both can live a long time without water, for instance.

Now, it's not so very unreasonable, at least to the free and easy vaudeville standards that, throughout this book, we are considering, to think that a green substance could be snatched up from one place in a whirlwind, and fall as a black substance somewhere else: but the royal Irishmen excluded something else, and it is a datum that was as accessible to them as it is to me:

That, according to Chladni, this was no little, local deposition that was seen to occur by some indefinite person living near a pond somewhere.

It was a tremendous fall from a vast sky-area.

Likely enough all the marsh paper in the world could not have supplied it.

At the same time, this substance was falling "in great quantities," in Norway and Pomerania. Or see Kirkwood, *Meteoric Astronomy,* p. 66:

“Substance like charred paper fell in Norway and other parts of northern Europe,. Jan. 31, 1686.”

Or a whirlwind, with a distribution as wide as that, would not acceptably, I should say, have so specialized in the rare substance called “marsh paper.” There’d have been falls of fence rails, roofs of houses, parts of trees. Nothing is said of the occurrence of a tornado in northern Europe, in January, 1686. There is record only of this one substance having fallen in various places.

Time went on, but the conventional determination to exclude data of all falls to this earth, except of substances of this earth, and of ordinary meteoric matter, strengthened.

*Annals of Philosophy, 1*6-68:

The substance that fell in January, 1686, is described as “a mass of black leaves, having the appearance of burnt paper, but harder, and cohering, and brittle.”

“Marsh paper” is not mentioned, and there is nothing said of the “conifervaœ,” which seemed so convincing to the royal Irishmen. Vegetable composition is disregarded, quite as it might be by someone who might find it convenient to identify a crook-necked squash as a big fishhook.

Meteorites are usually covered with a black crust, more or less scale-like. The substance of 1686 is black and scale-like. If so be convenience, “leaf-likeness” is “scale-likeness.” In this attempt to assimilate with the conventional, we are told that the substance is a mineral mass: that it is like the black scales that cover meteorites.

The scientist who made this “identification” was Von Grotthus. He had appealed to the god Chemical Analysis. Or the power and glory of mankind —with which we’re not always so impressed—but the gods must tell us what we want them to tell us. We see again that, though nothing has identity of its own, anything can be “identified” as anything. Or there’s nothing that’s not reasonable, if one snoopeth not into its exclusions. But here the conflict did not end. Berzelius examined the substance. He could not find nickel in it. At that time, the presence of nickel was the “positive” test of meteoritic matter. Whereupon, with a supposititious “positive” standard of judgment against him, Von Grotthus revoked his “identification.” (*Annals and Mag. of Nat. Hist*., 1-3-185.)

This equalization of eminences permits us to project with our own expression, which, otherwise, would be subdued into invisibility:

That it's too bad that no one ever looked to see—hieroglyphics ?—something written upon these sheets of paper?

If we have no very great variety of substances that have fallen to this earth; if, upon this earth's surface there is infinite variety of substances detachable by whirlwinds, two falls of such a rare substance as marsh paper would be remarkable.

A writer in the *Edinburgh Review*, 87-194, says that, at the time of writing, he had before him a portion of a sheet of 200 square feet, of a substance that had fallen at Carolath, Silesia, in 1839— exactly similar to cotton-felt, of which clothing might have been made. The god Microscopic Examination had spoken. The substance consisted chiefly of conifervaœ.

*Jour. Asiatic Soc. of Bengal, 1*847-pt. I-193:

That March 16, 1846—about the time of a fall of edible substance in Asia Minor—an olive-gray powder fell at Shanghai. Under the microscope, it was seen to be an aggregation of hairs of two kinds, black ones and rather thick white ones. They were supposed to be mineral fibers, but, when burned, they gave out "the common ammoniacal smell and smoke of burnt hair or feathers." The writer described the phenomenon as "a cloud of 3800 square miles of fibers, alkali, and sand." In a postscript, he says that other investigators, with more powerful microscopes, gave opinion that the fibers were not hairs; that the substance consisted chiefly of conifervaœ.

Or the pathos of it, perhaps; or the dull and uninspired, but courageous persistence of the scientific: everything seemingly found out is doomed to be subverted—by more powerful microscopes and telescopes; by more refined, precise, searching means and methods— the new pronouncements irrepressibly bobbing up; their reception always as Truth at last; always the illusion of the final; very little of the Intermediatist spirit—

That the new that has displaced the old will itself some day be displaced; that it, too, will be recognized as myth-stuff—

But that if phantoms climb, spooks of ladders are good enough for them.

Annual Register, 1821-681:

That, according to a report by M. Laine, French Consul at Pernambuco, early in October, 1821, there was a shower of a substance resembling silk. The quantity was as tremendous as might be a whole cargo, lost somewhere between Jupiter and Mars, having drifted around perhaps for centuries, the original fabrics slowly disintegrating. In *Annales de Chimie*, 2-15-427, it is said that samples of this substance were sent to France by M. Laine, and

that they proved to have some resemblances to silky filaments which, at certain times of the year, are carried by the wind near Paris.

In the *Annals of Philosophy*, n.s., 12-93, there is mention of a fibrous substance like blue silk that fell near Naumberg, March 23, 1665. According to Chladni (*Annales de Chimie*, 2-31-264), the quantity was great. He places a question mark before the date.

One of the advantages of Intermediatism is that, in the oneness of quasiness, there can be no mixed metaphors. Whatever is acceptable of anything, is, in some degree or aspect, acceptable of everything. So it is quite proper to speak, for instance, of something that is as firm as a rock and that sails in a majestic march. The Irish are good monists: they have of course been laughed at for their keener perceptions. So it's a book we're writing, or it's a procession, or it's a museum, with the Chamber of Horrors rather over-emphasized. A rather horrible correlation occurs in the *Scientific American, 1*859-178. What interests us is that a correspondent saw a silky substance fall from the sky—there was an aurora borealis at the time—he attributes the substance to the aurora.

Since the time of Darwin, the classic explanation has been that all silky substances that fall from the sky are spider webs. In 1832, aboard the *Beagle*, at the mouth of La Plata River, 60 miles from land, Darwin saw an enormous number of spiders, of the kind usually known as "gossamer" spiders, little aeronauts that cast out filaments by which the wind carries them.

It's difficult to express that silky substances that have fallen to this earth were not spider webs. My own acceptance is that spider webs are the merger; that there have been falls of an externally derived silky substance, and also of the webs, or strands, rather, of aeronautic spiders indigenous to this earth; that in some instances it is impossible to distinguish one from the other. Of course, our expression upon silky substances will merge away into expressions upon other seeming textile substances, and I don't know how much better off we'll be—

Except that, if fabricable materials have fallen from the sky—

Simply to establish acceptance of that may be doing well enough in this book of first and tentative explorations.

In *All the Year Round*, 8-254, is described a fall that took place in England, Sept. 21, 1741, in the towns of Bradly, Selborne, and Alresford, and in a triangular space included by these three towns. The substance is

described as “cobwebs”—but it fell in flake-formation, or in “flakes or rags about one inch broad and five or six inches long.” Also these flakes were of a relatively heavy substance—“they fell with some velocity.” The quantity was great—the shortest side of the triangular space is eight miles long. In the *Wernerian Nat Hist. Soc. Trans.,* 5-386, it is said that there were two falls—that they were some hours apart—a datum that is becoming familiar to us— a datum that cannot be taken into the fold, unless we find it repeated over and over and over again. It is said that the second fall lasted from nine o’clock in the morning until night.

Now the hypnosis of the classic—that what we call intelligence is only an expression of inequilibrium; that when mental adjustments are made, intelligence ceases—or, of course, that intelligence is the confession of ignorance. If you have intelligence upon any subject, that is something you’re still learning—if we agree that that which is learned is always mechanically done—in quasi-terms, of course, because nothing is ever finally learned.

It was decided that this substance was spiders’ web. That was adjustment. But it’s not adjustment to me; so I’m afraid I shall have some intelligence in this matter. If I ever arrive at adjustment upon this subject, then, upon this subject, I shall be able to have no thoughts, except routine-thoughts. I haven’t yet quite decided absolutely everything, so I am able to point out:

That this substance was of quantity so enormous that it attracted wide attention when it came down—

That it would have been equally noteworthy when it went up—

That there is no record of anyone, in England or elsewhere, having seen tons of “spider webs” going up, September, 1741.

Further confession of intelligence upon my part:

That, if it be contested, then, that the place of origin may have been far away, but still terrestrial—

Then it’s that other familiar matter of incredible “marksmanship” again—hitting a small, triangular space for hours—interval of hours —then from nine in the morning until night: same small triangular space.

These are the disregards of the classic explanation. There is no mention of spiders having been seen to fall, but a good inclusion is that, though this substance fell in good-sized flakes of considerable weight, it was viscous. In this respect it was like cobwebs: dogs nosing it on grass, were blindfolded with it. This circumstance does strongly suggest cobwebs—

Unless we can accept that, in regions aloft, there are vast viscous or gelatinous areas, and that things passing through become daubed. Or perhaps we clear up the confusion in the descriptions of the substance that fell in 1841 and 1846, in Asia Minor, described in one publication as gelatinous, and in another as a cereal—that it was a cereal that had passed through a gelatinous region. That the paper-like substance of Memel may have had such an experience may be indicated in that Ehrenberg found in it gelatinous matter, which he called "nostoc." (*Annals and Mag. of Nat. Hist., 1*-3-185.)

Scientific American, 45-337:

Fall of a substance described as "cobwebs," latter part of October, 1881, in Milwaukee, Wis., and other towns: other towns mentioned are Green Bay, Vesburge, Fort Howard, Sheboygan, and Ozaukee. The aeronautic spiders are known as "gossamer" spiders, because of the extreme lightness of the filaments that they cast out to the wind. Of the substance that fell in Wisconsin, it is said:

"In all instances the webs were strong in texture and very white."

The Editor says:

"Curiously enough, there is no mention in any of the reports that we have seen, of the presence of spiders."

So our attempt to divorce a possible external product from its terrestrial merger: then our joy of the prospector who thinks he's found something:

The *Monthly Weather Review, 26-566,* quotes the *Montgomery* (Ala.) *Advertiser:*

That, upon Nov. 21, 1898, numerous batches of spider-web-like substance fell in Montgomery, in strands and in occasional masses several inches long and several inches broad. According to the writer, it was not spiders' web, but something like asbestos; also that it was phosphorescent.

The Editor of the *Review* says that he sees no reason for doubting that these masses were cobwebs.

*La Nature, 1*883-342:

A correspondent writes that he sends a sample of a substance said to have fallen at Montussan (Gironde), Oct. 16, 1883. According to a witness, quoted by the correspondent, a thick cloud, accompanied by rain and a violent wind, had appeared. This cloud was composed of a woolly substance in lumps the size of a fist, which fell to the ground. The Editor (Tissandier) says of this substance that it was white, but was something that

had been burned. It was fibrous. M. Tissandier astonishes us by saying that he cannot identify this substance. We thought that anything could be "identified" as anything. He can say only that the cloud in question must have been an extraordinary conglomeration.

*Annual Register, 1*832-447:

That, March, 1832, there fell, in the fields of Kourianof, Russia, a combustible yellowish substance, covering, at least two inches thick, an area of 600 or 700 square feet. It was resinous and yellowish: so one inclines to the conventional explanation that it was pollen from pine trees—but, when torn, it had the tenacity of cotton. When placed in water, it had the consistency of resin. "This resin had the color of amber, was elastic, like India rubber, and smelled like prepared oil mixed with wax."

So in general our notion of cargoes—and our notion of cargoes of food supplies:

In *Philosophical Transactions*, 19-224, is an extract from a letter by Mr. Robert Vans, of Kilkenny, Ireland, dated Nov. 15, 1695: that there had been "of late," in the counties of Limerick and Tipperary, showers of a sort of matter like butter or grease . . . having "a very stinking smell."

There follows an extract from a letter by the Bishop of Cloyne, upon "a very odd phenomenon," which was observed in Munster and Leinster: that for a good part of the spring of 1695 there fell a substance which the country people called "butter"—"soft, clammy, and of a dark yellow"—that cattle fed "indifferently" in fields where this substance lay.

"It fell in lumps as big as the end of one's finger." It had a "strong ill scent." His Grace calls it a "stinking dew."

In Mr. Vans' letter, it is said that the "butter" was supposed to have medicinal properties, and "was gathered in pots and other vessels by some of the inhabitants of this place."

And:

In all the following volumes of *Philosophical Transactions* there is no speculation upon this extraordinary subject. Ostracism. The fate of this datum is a good instance of damnation, not by denial, and not by explaining away, but by simple disregard. The fall is listed by Chladni, and is mentioned in other catalogues, but, from the absence of all inquiry, and of all but formal mention, we see that it has been under excommunication as much as was ever anything by the preceding system. The datum has been buried alive. It is as irreconcilable with the modern system of dogmas as

ever were geologic strata and vermiform appendix with the preceding system—

If, intermittently, or "for a good part of the spring," this substance fell in two Irish provinces, and nowhere else, we have, stronger than before, a sense of a stationary region overhead, or a region that receives products like this earth's products, but from external sources, a region in which this earth's gravitational and meteorological forces are relatively inert—if for many weeks a good part of this substance did hover before finally falling. We suppose that, in 1685, Mr. Vans and the Bishop of Cloyne could describe what they saw as well as could witnesses in 1885: nevertheless, it is going far back; we shall have to have many modern instances before we can accept.

As to other falls, or another fall, it is said in the *Amer. Jour. Sci., 1*-28-361, that, April 11, 1832—about a month after the fall of the substance of Kourianof—fell a substance that was wine-yellow, transparent, soft, and smelling like rancid oil. M. Herman, a chemist who examined it, named it "sky oil." For analysis and chemic reactions, see the *Journal.* The *Edinburgh New Philosophical Journal, 1*3-368, mentions an "unctuous" substance that fell near Rotterdam, in 1832. In *Comptes Rendus, 1*3-215, there is an account of an oily, reddish matter that fell at Genoa, February, 1841.

Whatever it may have been—

Altogether, most of our difficulties are problems that we should leave to later developers of super-geography, I think. A discoverer of America should leave Long Island to someone else. If there be, plying back and forth from Jupiter and Mars and Venus, super-constructions that are sometimes wrecked, we think of fuel as well as cargoes. Of course the most convincing data would be of coal falling from the sky: nevertheless, one does suspect that oil-burning engines were discovered ages ago in more advanced worlds —but, as I say, we should leave something to our disciples—so we'll not especially wonder whether these butter-like or oily substances were food or fuel. So we merely note that in the *Scientific American*, 24-323, is an account of hail that fell, in the middle of April, 1871, in Mississippi, in which was a substance described as turpentine.

Something that tasted like orange water, in hailstones, about the first of June, 1842, near Nîmes, France; identified as nitric acid (*Jour, de Pharmacie, 1*845-273).

Hail and ashes, in Ireland, 1755 (Sci. *Amer.,* 5-168).

That, at Elizabeth, N. J., June 9, 1874, fell hail in which was a substance, said, by Prof. Leeds, of Stevens Institute, to be carbonate of soda (*Sci. Amer.,* 30-262).

We are getting a little away from the lines of our composition, but it will be an important point later that so many extraordinary falls have occurred with hail. Or—if they were of substances that had had origin upon some other part of this earth's surface—had the hail, too, that origin? Our acceptance here will depend upon the number of instances. Reasonably enough, some of the things that fall to this earth should coincide with falls of hail.

As to vegetable substances in quantities so great as to suggest lost cargoes, we have a note in the *Intellectual Observer,* 3-468: that, upon the first of May, 1863, a rain fell at Perpignan, "bringing down with it a red substance, which proved on examination to be a red meal mixed with fine sand." At various points along the Mediterranean, this substance fell.

There is, in *Philosophical Transactions, 1*6-281, an account of a seeming cereal, said to have fallen in Wiltshire, in 1686—said that some of the "wheat" fell "enclosed in hailstones"—but the writer in *Transactions,* says that he had examined the grains, and that they were nothing but seeds of ivy berries dislodged from holes and chinks where birds had hidden them. If birds still hide ivy seeds, and if winds still blow, I don't see why the phenomenon has not repeated in more than two hundred years since.

Or the red matter in rain, at Siena, Italy, May, 1830; said, by Arago, to have been vegetable matter (Arago, *Œuvres,* 12-468).

Somebody should collect data of falls at Siena alone.

In the *Monthly Weather Review,* 29-465, a correspondent writes that, upon Feb. 16, 1901, at Pawpaw, Michigan, upon a day that was so calm that his windmill did not run, fell a brown dust that looked like vegetable matter. The Editor of the *Review* concludes that this was no widespread fall from a tornado, because it had been reported from nowhere else.

Rancidness—putridity—decomposition—a note that has been struck many times. In a positive sense, of course, nothing means anything, or every meaning is continuous with all other meanings: or that all evidences of guilt, for instance, are just as good evidences of innocence—but this condition seems to mean—things lying around among the stars a long time. Horrible disaster in the time of Julius Caesar; remains from it not reaching

this earth till the time of the Bishop of Cloyne: we leave to later research the discussion of bacterial action and decomposition, and whether bacteria could survive in what we call space, of which we know nothing—

Chemical News, 35-183:

Dr. A. T. Machattie, F.C.S., writes that, at London, Ontario, Feb. 24, 1868, in a violent storm, fell, with snow, a dark-colored substance, estimated at 500 tons, over a belt 50 miles by 10 miles. It was examined under a microscope, by Dr. Machattie, who found it to consist mainly of vegetable matter "far advanced in decomposition." The substance was examined by Dr. James Adams, of Glasgow, who gave his opinion that it was the remains of cereals. Dr. Machattie points out that for months before this fall the ground of Canada had been frozen, so that in this case a more than ordinarily remote origin has to be thought of. Dr. Machattie thinks of origin to the south. "However," he says, "this is mere conjecture."

*Amer. Jour. Sci., 1*841-40:

That, March 24, 1840—during a thunderstorm—at Rajkit, India, occurred a fall of grain. It was reported by Col. Sykes, of the British Association.

The natives were greatly excited—because it was grain of a kind unknown to them.

Usually comes forward a scientist who knows more of the things that natives know best than the natives know—but it so happens that the usual thing was not done definitely in this instance:

"The grain was shown to some botanists, who did not immediately recognize it, but thought it to be either a spartium or a vicia."

6

LEAD, silver, diamonds, glass.

I They sound like the accursed, but they're not: they're now of the chosen—that is, when they occur in metallic or stony masses that Science has recognized as meteorites. We find that resistance is to substances not so mixed in or incorporated.

Of accursed data, it seems to me that punk is pretty damnable. In the Report of the British Association, 1878-376, there is mention of a light chocolate-brown substance that has fallen with meteorites. No particulars given; not another mention anywhere else that I can find. In this English publication, the word "punk" is not used; the substance is called "amadou." I suppose, if the datum has anywhere been admitted to French publications, the word "amadou" has been avoided, and "punk" used.

Or oneness of allness: scientific works and social registers: a Goldstein who can't get in as Goldstein, gets in as Jackson.

The fall of sulphur from the sky has been especially repulsive to the modern orthodoxy—largely because of its associations with the superstitions or principles of the preceding orthodoxy—stories of devils: sulphurous exhalations. Several writers have said that they have had this feeling. So the scientific reactionists, who have rabidly fought the preceding, because it was the preceding: and the scientific prudes, who, in sheer exclusionism, have held lean hands over pale eyes, denying falls of sulphur. I have many notes upon the sulphurous odor of meteorites, and many notes upon phosphorescence of things that come from externality. Some day I shall look over old stories of demons that have appeared sulphurously upon this earth, with the idea of expressing that we have often had undesirable visitors from other worlds; or that an indication of external derivation is sulphurousness. I expect some day to ration alize demonology, but just at present we are scarcely far enough advanced to go so far back.

For a circumstantial account of a mass of burning sulphur, about the size of a man's fist, that fell at Pultusk, Poland, Jan. 30, 1868, upon a road,

where it was stamped out by a crowd of villagers, see *Rept. Brit. Assoc., 1*874-272.

The power of the exclusionists lies in that in their stand are combined both modern and archaic systematists. Falls of sandstone and limestone are repulsive to both theologians and scientists. Sandstone and limestone suggest other worlds upon which occur processes like geological processes; but limestone, as a fossiliferous substance, is of course especially of the unchosen.

In *Science*, March 9, 1888, we read of a block of limestone, said to have fallen near Middleburg, Florida. It was exhibited at the Sub-tropical Exposition, at Jacksonville. The writer, in *Science*, denies that it fell from the sky. His reasoning is:

There is no limestone in the sky;

Therefore this limestone did not fall from the sky.

Better reasoning I cannot conceive of—because we see that a final major premise—universal—true—would include all things: that, then, would leave nothing to reason about—so then that all reasoning must be based upon "something" not universal, or only a phantom intermediate to the two finalities of nothingness and all-ness, or negativeness and positiveness.

*La Nature, 1*890-2-127:

Fall, at Pel-et-Der (L'Aube), France, June 6, 1890, of limestone pebbles. Identified with limestone at Château-Landon—or up and down in a whirlwind. But they fell with hail—which, in June, could not very well be identified with ice from Château-Landon. Coincidence, perhaps.

Upon page 70, *Science Gossip, 1*887, the Editor says, of a stone that was reported to have fallen at Little Lever, England, that a sample had been sent to him. It was sandstone. Therefore it had not fallen, but had been on the ground in the first place. But, upon page 140, *Science Gossip, 1*887, is an account of "a large, smooth, waterworn, gritty sandstone pebble" that had been found in the wood of a full-grown beech tree. Looks to me as if it had fallen red-hot, and had penetrated the tree with high velocity. But I have never heard of anything falling red-hot from a whirl-wind—

The wood around this sandstone pebble was black, as if charred.

Dr. Farrington, for instance, in his books, does not even mention sandstone. However, the British Association, though reluctant, is less exclusive: *Report* of 1860, p. 197: substance about the size of a duck's egg, that fell at Raphoe, Ireland, June 9, 1860—date questioned. It is not

definitely said that this substance was sandstone, but that it “resembled” friable sandstone.

Falls of salt have occurred often. They have been avoided by scientific writers, because of the dictum that only water and not substances held in solution, can be raised by evaporation. However, falls of salty water have received attention from Dalton and others, and have been attributed to whirlwinds from the sea. This is so reasonably contested—quasi-reasonably—as to places not far from the sea—

But the fall of salt that occurred high in the mountains of Switzerland—

We could have predicted that that datum could be found somewhere. Let anything be explained in local terms of the coast of England—but also has it occurred high in the mountains of Switzerland.

Large crystals of salt fell—in a hailstorm—Aug. 20, 1870, in Switzerland. The orthodox explanation is a crime: whoever made it, should have had his finger-prints taken. We are told (*An. Rec. Sci., 1*872) that these objects of salt “came over the Mediterranean from some part of Africa.”

Or the hypnosis of the conventional—provided it be glib. One reads such an assertion, and provided it be suave and brief and conventional, one seldom questions—or thinks “very strange” and then forgets. One has an impression from geography lessons: Mediterranean not more than three inches wide, on the map; Switzerland only a few more inches away. These sizable masses of salt are described in the *Amer. Jour. Sci.,* 3-3-239, as “essentially imperfect cubic crystals of common salt.” As to occurrence with hail —that can in one, or ten, or twenty, instances be called a coincidence.

Another datum: extraordinary year 1883:

London *Times,* Dec. 25, 1883:

Translation from a Turkish newspaper; a substance that fell at Scutari, Dec. 2, 1883; described as an unknown substance, in particles—or flakes?—like snow. “It was found to be saltish to the taste, and to dissolve readily in water.”

Miscellaneous:

“Black, capillary matter” that fell, Nov. 16, 1857, at Charleston, S. C. (*Amer. Jour. Sci.,* 2-31-459).

Fall of small, friable, vesicular masses, from size of a pea to size of a walnut, at Lobau, Jan. 18, 1835 (*Rept. Brit. Assoc., 1*860-85).

Objects that fell at Peshawur, India, June, 1893, during a storm: substance that looked like crystallized niter, and that tasted like sugar (*Nature,* July 13, 1893).

I suppose sometimes deep-sea fishes have their noses bumped by cinders. If their regions be subjacent to Cunard or White Star routes, they're especially likely to be bumped. I conceive of no inquiry: they're deep-sea fishes.

Or the slag of Slains. That it was a furnace-product. The Rev. James Rust seemed to feel bumped. He tried in vain to arouse inquiry.

As to a report, from Chicago, April 9, 1879, that slag had fallen from the sky, Prof. E. S. Bastian (*Amer. jour. Sci.,* 3-18-78) says that the slag "had been on the ground in the first place." It was furnace-slag. "A chemical examination of the specimens has shown that they possess none of the characteristics of true meteorites."

Over and over and over again, the universal delusion; hope and despair of attempted positivism; that there can be real criteria, or distinct characteristics of anything. If anybody can define—not merely suppose, like Prof. Bastian, that he can define—the true characteristics of anything, or so localize trueness anywhere, he makes the discovery for which the cosmos is laboring. He will be instantly translated, like Elijah, into the Positive Absolute. My own notion is that, in a moment of super-concentration, Elijah became so nearly a real prophet that he was translated to heaven, or to the Positive Absolute, with such velocity that he left an incandescent train behind him. As we go along, we shall find the "true test of meteoritic material," which in the past has been taken as an absolute, dissolving into almost utmost nebulosity. Prof. Bastian explains mechanically, or in terms of the usual reflexes to all reports of unwelcome substances: that near where the slag had been found, telegraph wires had been struck by lightning; that particles of melted wire had been seen to fall near the slag—which had been on the ground in the first place. But, according to the *New York Times,* April 14, 1879, about two bushels of this substance had fallen.

Something that was said to have fallen at Darmstadt, June 7, 1846; listed by Greg (*Rept. Brit. Assoc., 1*867-416) as "only slag."

Philosophical Magazine, 4-10-381:

That, in 1855, a large stone was found far in the interior of a tree, in Battersea Fields.

Sometimes cannon balls are found embedded in trees. Doesn't seem to be anything to discuss; doesn't seem discussable that any one would cut a hole in a tree and hide a cannon ball, which one could take to bed, and hide under one's pillow, just as easily. So with the stone of Battersea Fields. What is there to say, except that it fell with high velocity and embedded in the tree? Nevertheless, there was a great deal of discussion—

Because, at the foot of the tree, as if broken off the stone, fragments of slag were found.

I have nine other instances.

Slag and cinders and ashes, and you won't believe, and neither will I, that they came from the furnaces of vast aerial superconstructions. We'll see what looks acceptable.

As to ashes, the difficulties are great, because we'd expect many falls of terrestrially derived ashes—volcanoes and forest fires.

In some of our acceptances, I have felt a little radical—

I suppose that one of our main motives is to show that there is, in quasi-existence, nothing but the preposterous—or something intermediate to absolute preposterousness and final reasonableness— that the new is the obviously preposterous; that it becomes the established and disguisedly preposterous; that it is displaced, after a while, and is again seen to be the preposterous. Or that all progress is from the outrageous to the academic or sanctified, and back to the outrageous—modified, however, by a trend of higher and higher approximation to the impreposterous. Sometimes I feel a little more uninspired than at other times, but I think we're pretty well accustomed now to the oneness of allness; or that the methods of science in maintaining its system are as outrageous as the attempts of the damned to break in. In the *Annual Record of Science, 1*875-241, Prof. Daubrée is quoted: that ashes that had fallen in the Azores had come from the Chicago fire—

Or the damned and the saved, and there's little to choose between them; and angels are beings that have not obviously barbed tails to them—or never have such bad manners as to stroke an angel below the waist-line.

However this especial outrage was challenged: the Editor of the *Record* returns to it, in the issue of 1876: considers it "in the highest degree improper to say that the ashes of Chicago were landed in the Azores."

Bull. Soc. Astro, de France, 22-245:

Account of a white substance, like ashes, that fell at Annoy, France, March 27, 1908: simply called a curious phenomenon; no attempt to trace to a terrestrial source.

Flake formations, which may signify passage through a region of pressure, are common; but spherical formations—as if of things that have rolled and rolled along planar regions somewhere—are commoner:

Nature, Jan. 10, 1884, quotes a Kimberley newspaper:

That, toward the close of November, 1883, a thick shower of ashy matter fell at Queenstown, South Africa. The matter was in marble-sized balls, which were soft and pulpy, but which, upon drying, crumbled at touch. The shower was confined to one narrow streak of land. It would be only ordinarily preposterous to attribute this substance to Krakatoa—

But, with the fall, loud noises were heard—

But I'll omit many notes upon ashes: if ashes should sift down upon deep-sea fishes, that is not to say that they came from steamships.

Data of falls of cinders have been especially damned by Mr. Symons, the meteorologist, some of whose investigations we'll investigate later—nevertheless—

Notice of a fall, in Victoria, Australia, April 14, 1875 (*Rept. Brit. Assoc.*, 1875-242)—at least we are told, in the reluctant way, that someone "thought" he saw matter fall near him at night, and the next day found something that looked like cinders.

In the *Proc. of the London Roy. Soc., 1*9-122, there is an account of cinders that fell on the deck of a lightship, Jan. 9, 1873. In the *Amer. Jour. Sci.*, 2-24-449, there is a notice that the Editor had received a specimen of cinders said to have fallen—in showery weather—upon a farm, near Ottowa, Ill., Jan. 17, 1857.

But after all, ambiguous things they are, cinders or ashes or slag or clinkers, the high priest of the accursed that must speak aloud for us is—coal that has fallen from the sky.

Or coke:

The person who thought he saw something like cinders, also thought he saw something like coke, we are told.

Nature, 36-119:

Something that "looked exactly like coke" that fell—during a thunderstorm—in the Orne, France, April 24, 1887.

Or charcoal:

Dr. Angus Smith, in the *Lit. and Phil. Soc. of Manchester Memoirs*, 2-9-146, says that, about 1827—like a great deal in Lyell's *Principles* and Darwin's *Origin*, this account is from hearsay—something fell from the sky, near Allport, England. It fell luminously, with a loud report, and scattered in a field. A fragment that was seen by Dr. Smith, is described by him as having "the appearance of a piece of common wood charcoal." Nevertheless, the reassured feeling of the faithful, upon reading this, is burdened with data of differences: the substance was so uncommonly heavy that it seemed as if it had iron in it; also there was "a sprinkling of sulphur." This material is said, by Prof. Baden-Powell, to be "totally unlike that of any other meteorite." Greg, in his catalogue (*Rept. Brit. Assoc., 1*860-73), calls it "a more than doubtful substance"—but again, against reassurance, that is not doubt of authenticity. Greg says that it is like compact charcoal with particles of sulphur and iron pyrites embedded.

Reassurance rises again:

Prof. Baden-Powell says: "It contains also charcoal, which might perhaps be acquired from matter among which it fell."

This is a common reflex with the exclusionists: that substances not "truly meteoritic" did not fall from the sky, but were picked up by "truly meteoritic" things, of course only on their surfaces, by impact with this earth.

Rhythm of reassurances and their declines:

According to Dr. Smith, this substance was not merely coated with charcoal; his analysis gives 43.59 per cent carbon.

Our acceptance that coal has fallen from the sky will be via data of resinous substances and bituminous substances, which merge so that they cannot be told apart.

Resinous substance said to have fallen at Kaba, Hungary, April 15, 1887 (*Rept. Brit. Assoc.*, 1860-94).

A resinous substance that fell after a fireball? at Neuhaus, Bohemia, Dec. 17, 1824 (*Rept. Brit. Assoc., 1*860-70).

Fall, July 28, 1885, at Luchon, during a storm, of a brownish substance; very friable, carbonaceous matter; when burned it gave out a resinous odor (*Comptes Rendus*, 103-837).

Substance that fell, Feb. 17, 18, 19, 1841, at Genoa, Italy, said to have been resinous; said by Arago (*Œuvres*, 12-469) to have been bituminous matter and sand.

Fall—during a thunderstorm—July, 1681, near Cape Cod, upon the deck of an English vessel, the *Albemarle,* of "burning, bituminous matter" (*Edin. New Phil. Jour.*, 26-86); a fall, at Christiania, Norway, June 13, 1822, of bituminous matter, listed by Greg as doubtful; fall of bituminous matter, in Germany, March 8, 1798, listed by Greg. Lockyer (*The Meteoric Hypothesis,* p. 24) says that the substance that fell at the Cape of Good Hope, Oct. 13, 1838 —about five cubic feet of it: substance so soft that it was cuttable with a knife—"after being experimented upon, it left a residue, which gave out a very bituminous smell."

And this inclusion of Lockyer's—so far as findable in all books that I have read—is, in books, about as close as we can get to our desideratum—that coal has fallen from the sky. Dr. Farrington, except with a brief mention, ignores the whole subject of the fall of carbonaceous matter from the sky. Proctor, in all of his books that I have read—is, in books, about as close as we can get to the admission that carbonaceous matter has been found in meteorites "in very minute quantities"—or my own suspicion is that it is possible to damn something else only by losing one's own soul—quasi-soul, of course.

Sci. Amer., 35-120:

That the substance that fell at the Cape of Good Hope "resembled a piece of anthracite coal more than anything else."

It's a mistake, I think: the resemblance is to bituminous coal— but it is from the periodicals that we must get our data. To the writers of books upon meteorites, it would be as wicked—by which we mean departure from the characters of an established species—quasi-established, of course—to say that coal has fallen from the sky, as would be, to something in a barnyard, a temptation that it climb a tree and catch a bird. Domestic things in a barnyard: and how wild things from forests outside seem to them. Or the homeopathist—but we shall shovel data of coal.

And, if over and over, we shall learn of masses of soft coal that have fallen upon this earth, if in no instance has it been asserted that the masses did not fall, but were upon the ground in the first place; if we have many instances, this time we turn down good and hard the mechanical reflex that these masses were carried from one place to another in whirlwinds, because we find it too difficult to accept that whirlwinds could so select, or so specialize in a peculiar substance. Among writers of books, the only one I know of who makes more than brief mention is Sir Robert Ball. He

represents a still more antique orthodoxy, or is an exclusionist of the old type, still holding out against even meteorites. He cites several falls of carbonaceous matter, but with disregards that make for reasonableness that earthy matter may have been caught up by whirlwinds and flung down somewhere else. If he had given a full list, he would be called upon to explain the special affinity of whirlwinds for a special kind of coal. He does not give a full list. We shall have all that's findable, and we shall see that against this disease we're writing, the homeopathist's prescription availeth not. Another exclusionist was Prof. Lawrence Smith. His psycho-tropism was to respond to all reports of carbonaceous matter falling from the sky, by saying that this damned matter had been deposited upon things of the chosen by impact with this earth. Most of our data antedate him, or were contemporaneous with him, or were as accessible to him as to us. In his attempted positivism it is simply— and beautifully—disregarded that, according to Berthelot, Berzelius, Cloez, Wohler and others these masses are not merely coated with carbonaceous matter, but are carbonaceous throughout, or are permeated throughout. How anyone could so resolutely and dogmatically and beautifully and blindly hold out would puzzle us were it not for our acceptance that only to think is to exclude and include; and to exclude some things that have as much right to come in as have the included—that to have an opinion upon any subject is to be a Lawrence Smith—because there is no definite subject.

Dr. Walter Flight (*Eclectic Magazine*, 89-71) says, of the substance that fell near Alais, France, March 15, 1806, that it "emits a faint bituminous substance" when heated, according to the observations of Bergelius and a commission appointed by the French Academy. This time we have not the reluctances expressed in such words as "like" and "resembling." We are told that this substance is "an earthy kind of coal."

As to "minute quantities" we are told that the substance that fell at the Cape of Good Hope has in it a little more than a quarter of organic matter, which, in alcohol, gives the familiar reaction of yellow, resinous matter. Other instances given by Dr. Flight are:

Carbonaceous matter that fell in 1840, in Tennessee; Cranbourne, Australia, 1861; Montauban, France, May 14, 1864 (twenty masses, some of them as large as a human head, of a substance that "resembled a dull-colored earthy lignite"); Goalpara, India, about 1867 (about 8 per cent of a

hydrocarbon); at Ornans, France, July 11, 1868; substance with “an organic, combustible ingredient,” at Hessle, Sweden, Jan. 1, 1860.

Knowledge, 4-134:

That, according to M. Daubrée, the substance that had fallen in the Argentine Republic, “resembled certain kinds of lignite and boghead coal.” In *Comptes Rendus*, 96-1764, it is said that this mass fell, June 30, 1880, in the province Entre Ríos, Argentina: that it is “like” brown coal; that it resembles all the other carbonaceous masses that have fallen from the sky.

Something that fell at Grazac, France, Aug. 10, 1885: when burned, it gave out a bituminous odor (*Comptes Rendus, 1*04-1771).

Carbonaceous substance that fell at Rajpunta, India, Jan. 22, 1911: very friable: 50 per cent of its soluble in water (*Records Geol. Survey of India*, 44-pt. I-41).

A combustible carbonaceous substance that fell with sand at Naples, March 14, 1818 (*Amer, Jour. Sci*., 1-1-309).

Sci. Amer. Sup., 29-11798:

That, June 9, 1889, a very friable substance, of a deep, greenish black, fell at Mighei, Russia. It contained 5 per cent organic matter, which, when powdered and digested in alcohol, yielded, after evaporation, a bright yellow resin. In this mass was 2 per cent of an unknown mineral.

Cinders and ashes and slag and coke and charcoal and coal.

And the things that sometimes deep-sea fishes are bumped by.

Reluctances and the disguises or covered retreats of such words as “like” and “resemble”—or that conditions of Intermediateness forbid abrupt transitions—but that the spirit animating all Interme-diateness is to achieve abrupt transitions—because, if anything could finally break away from its origin and environment, that would be a real thing—something not merging away indistinguishably with the surrounding. So all attempt to be original; all attempt to invent something that is more than mere extension or modification of the preceding, is positivism—or that if one could conceive of a device to catch flies, positively different from, or unrelated to, all other devices—up he’d shoot to heaven, or the Positive Absolute—leaving behind such an incandescent train that in one age it would be said that he had gone aloft in a fiery chariot, and in another age that he had been struck by lightning—

I’m collecting notes upon persons supposed to have been struck by lightning. I think that high approximation to positivism has often been

achieved—instantaneous translation—residue of negativeness left behind, looking much like effects of a stroke of lightning. Some day I shall tell the story of the *Marie Celeste*—"properly," as the *Scientific American Supplement* would say—mysterious disappearance of a sea captain, his family, and the crew—

Of positivists, by the route of Abrupt Transition, I think that Manet was notable—but that his approximation was held down by his intense relativity to the public—or that it is quite as impositive to flout and insult and defy as it is to crawl and placate. Of course, Manet began with continuity with Courbet and others, and then, between him and Manet there were mutual influences—but the spirit of abrupt difference is the spirit of positivism, and Manet's stand was against the dictum that all lights and shades must merge away suavely into one another and prepare for one another. So a biologist like De Vries represents positivism, or the breaking of Continuity, by trying to conceive of evolution by mutation—against the dogma of indistinguishable gradations by "minute variations." A Copernicus conceives of helio-centricity. Continuity is against him. He is not permitted to break abruptly with the past. He is permitted to publish his work, but only as "an interesting hypothesis."

Continuity—and that all that we call evolution or progress is attempt to break away from it—

That our whole solar system was at one time attempt by planets to break away from a parental nexus and set up as individualities, and, failing, move in quasi-regular orbits that are expressions of relations with the sun and with one another, all having surrendered, being now quasi-incorporated in a higher approximation to system;

Intermediateness in its mineralogic aspect of positivism—or Iron that strove to break away from Sulphur and Oxygen, and be real, homogeneous Iron—failing, inasmuch as elemental iron exists only in text-book chemistry;

Intermediateness in its biologic aspect of positivism—or the wild, fantastic, grotesque, monstrous things it conceived of, sometimes in a frenzy of effort to break away abruptly from all preceding types—but failing, in the giraffe-effort, for instance, or only caricaturing an antelope—

All things break one relation only by the establishing of some other relation—

All things cut an umbilical cord only to clutch a breast.

So the fight of the exclusionists to maintain the traditional—or to prevent abrupt transition from the quasi-established—fighting so that here, more than a century after meteorites were included, no other notable inclusion has been made, except that of cosmic dust, data of which Nordenskiold made more nearly real than data in opposition.

So Proctor, for instance, fought and expressed his feeling of the preposterous, against Sir W. H. Thomson's notions of arrival upon this earth of organisms on meteorites—

"I can only regard it as a jest" (*Knowledge*, 1-302).

Or that there is nothing but jest—or something intermediate to jest and tragedy;

That ours is not an existence but an utterance;

That Momus is imagining us for the amusement of the gods, often with such success that some of us seem almost alive—like characters in something a novelist is writing; which often to considerable degree take their affairs away from the novelist—

That Momus is imagining us and our arts and sciences and religions, and is narrating or picturing us as a satire upon the gods' real existence.

Because—with many of our data of coal that has fallen from the sky as accessible then as they are now, and with the scientific pronouncement that coal is fossil, how, in a real existence, by which we mean a consistent existence, or a state in which there is real intelligence, or a form of thinking that does not indistinguishably merge away with imbecility, could there have been such a row as that which was raised about forty years ago over Dr. Hahn's announcement that he had found fossils in meteorites?

Accessible to anybody at that time:

Philosophical Magazine, 4-17-425:

That the substance that fell at Kaba, Hungary, April 15, 1857, contained organic matter "analagous to fossil waxes."

Or limestone:

Of the block of limestone which was reported to have fallen at Middleburg, Florida, it is said (*Science, 11*-118) that, though something had been seen to fall in "an old cultivated field," the witnesses who ran to it picked up something that "had been upon the ground in the first place." The writer who tells us this, with the usual exclusion-imagination known as stupidity, but unjustly, because there is no real stupidity, thinks he can think of a good-sized stone that had for many years been in a cultivated field, but

that had never been seen before—had never interfered with plowing, for instance. He is earnest and unjarred when he writes that this stone weighs 200 pounds. My own notion, founded upon my own experience in seeing, is that a block of stone weighing 500 pounds might be in one's parlor twenty years, virtually unseen—but not in an old cultivated field, where it interfered with plowing—not anywhere—if it interfered.

Dr. Hahn said that he had found fossils in meteorites. There is a description of the corals, sponges, shells, and crinoids, all of them microscopic, which he photographed, in *Popular Science,* 20-83.

Dr. Hahn was a well-known scientist. He was better known after that.

Anybody may theorize upon other worlds and conditions upon them that are similar to our own conditions: if his notions be presented undisguisedly as fiction, or only as an "interesting hypothesis," he'll stir up no prude rages.

But Dr. Hahn said definitely that he had found fossils in specified meteorites: also he published photographs of them. His book is in the New York Public Library. In the reproductions every feature of some of the little shells is plainly marked. If they're not shells, neither are things under an oyster-counter. The striations are very plain: one sees even the hinges where bivalves are joined.

Prof. Lawrence Smith (*Knowledge*, 1-258):

"Dr. Hahn is a kind of half-insane man, whose imagination has run away with him."

Conservation of Continuity.

Then Dr. Weinland examined Dr. Hahn's specimens. He gave his opinion that they are fossils and that they are not crystals of enstatite, as asserted by Prof. Smith, who had never seen them.

The damnation of denial and the damnation of disregard:

After the publication of Dr. Weinland's findings—silence.

7

THE living things that have come down to this earth: Attempts to preserve the system:

That small frogs and toads, for instance, never have fallen from the sky, but were—"on the ground, in the first place"; or that there have been such falls—"up from one place in a whirlwind, and down in another."

Were there some especially froggy place near Europe, as there is an especially sandy place, the scientific explanation would of course be that all small frogs falling from the sky in Europe come from that center of frogeity.

To start with, I'd like to emphasize something that I am permitted to see because I am still primitive or intelligent or in a state of maladjustment:

That there is not one report findable of a fall of tadpoles from the sky.

As to "there in the first place":

See *Leisure Hours,* 3-779, for accounts of small frogs, or toads, said to have been seen to fall from the sky. The writer says that all observers were mistaken: that the frogs or toads must have fallen from trees or other places overhead.

Tremendous number of little toads, one or two months old, that were seen to fall from a great thick cloud that appeared suddenly in a sky that had been cloudless, August, 1804, near Toulouse, France, according to a letter from Prof. Pontus to M. Arago. (*Comptes Rendus,* 3-54.)

Many instances of frogs that were seen to fall from the sky. (*Notes and Queries,* 8-6-104); accounts of such falls, signed by witnesses. (*Notes and Queries,* 8-6-190.)

Scientific American, July 12, 1873:

"A shower of frogs which darkened the air and covered the ground for a long distance is the reported result of a recent rainstorm at Kansas City, Mo."

As to having been there "in the first place":

Little frogs found in London, after a heavy storm, July 30, 1838. (*Notes and Queries,* 8-7-437) ;

Little toads found in a desert, after a rainfall (*Notes and Queries*, 8-8-493).

To start with I do not deny—positively—the conventional explanation of "up and down." I think that there may have been such occurrences. I omit many notes that I have upon indistinguishables. In the London *Times*, July 4, 1883, there is an account of a shower of twigs and leaves and tiny toads in a storm upon the slopes of the Apennines. These may have been the ejecta-menta of a whirlwind. I add, however, that I have notes upon two other falls of tiny toads, in 1883, one in France and one in Tahiti; also of fish in Scotland. But in the phenomenon of the Apennines, the mixture seems to me to be typical of the products of a whirl-wind. The other instances seem to me to be typical of—something like migration? Their great numbers and their homogeneity. Over and over in these annals of the damned occurs the datum of segregation. But a whirlwind is thought of as a condition of chaos—quasi-chaos: not final negativeness, of course—

Monthly Weather Review, July, 1881:

"A small pond in the track of the cloud was sucked dry, the water being carried over the adjoining fields together with a large quantity of soft mud, which was scattered over the ground for half a mile around."

It is so easy to say that small frogs that have fallen from the sky had been scooped up by a whirlwind; but here are the circumstances of a scoop; in the exclusionist-imagination there is no regard for mud, débris from the bottom of a pond, floating vegetation, loose things from the shores—but a precise picking out of frogs only. Of all instances I have that attribute the fall of small frogs or toads to whirlwinds, only one definitely identifies or places the whirlwind. Also, as has been said before, a pond going up would be quite as interesting as frogs coming down. Whirlwinds we read of over and over—but where and what whirlwind? It seems to me that anybody who had lost a pond would be heard from. In *Symons' Meteorological Magazine*, 32-106, a fall of small frogs, near Birmingham, England, June 30, 1892, is attributed to a specific whirlwind—but not a word as to any special pond that had contributed. And something that strikes my attention here is that these frogs are described as almost white.

I'm afraid there is no escape for us: we shall have to give to civilization upon this earth—some new worlds.

Places with white frogs in them.

Upon several occasions we have had data of unknown things that have fallen from—somewhere. But something not to be overlooked is that if living things have landed alive upon this earth—in spite of all we think we know of the accelerative velocity of falling bodies —and have propagated —why the exotic becomes the indigenous, or from the strangest of places we'd expect the familiar. Or if hosts of living frogs have come here—from somewhere else—every living thing upon this earth may, ancestrally, have come from— somewhere else.

I find that I have another note upon a specific hurricane:

Annals and Mag. of Nat. Hist., 1-3-185:

After one of the greatest hurricanes in the history of Ireland, some fish were found "as far as 15 yards from the edge of a lake."

Have another: this is a good one for the exclusionists:

Fall of fish in Paris: said that a neighboring pond had been blown dry. (*Living Age*, 52-186.) Date not given, but I have seen it recorded somewhere else.

The best-known fall of fishes from the sky is that which occurred at Mountain Ash, in the Valley of Abedare, Glamorganshire, Feb. 11, 1859.

The Editor of the *Zoologist*, 2-677, having published a report of a fall of fishes, writes: "I am continually receiving similar accounts of frogs and fishes." But, in all the volumes of the *Zoologist*, I can find only two reports of such falls. There is nothing to conclude other than that hosts of data have been lost because orthodoxy does not look favorably upon such reports. The *Monthly Weather Review* records several falls of fishes in the United States; but accounts of these reported occurrences are not findable in other American publications. Nevertheless, the treatment by the *Zoologist* of the fall reported from Mountain Ash is fair. First appears, in the issue of 1859-6493, a letter from the Rev. John Griffith, Vicar of Abedare, asserting that the fall had occurred, chiefly upon the property of Mr. Nixon, of Mountain Ash. Upon page 6540, Dr. Gray, of the British Museum, bristling with exclusionism, writes that some of these fishes, which had been sent to him alive, were "very young minnows." He says: "On reading the evidence, it seems to me most probably only a practical joke: that one of Mr. Nixon's employees had thrown a pailful of water upon another, who had thought fish in it had fallen from the sky"—had dipped up a pailful from a brook.

Those fishes—still alive—were exhibited at the Zoological Gardens, Regent's Park. The Editor says that one was a minnow and that the rest

were sticklebacks.

He says that Dr. Gray's explanation is no doubt right.

But, upon page 6564, he publishes a letter from another correspondent, who apologizes for opposing "so high an authority as Dr. Gray," but says that he had obtained some of these fishes from persons who lived at a considerable distance apart, or considerably out of range of the playful pail of water.

According to the *Annual Register, 1*859-14, the fishes themselves had fallen by pailfuls.

If these fishes were not upon the ground in the first place, we base our objections to the whirlwind explanation upon two data:

That they fell in no such distribution as one could attribute to the discharge of a whirlwind, but upon a narrow strip of land: about 80 yards long and 12 yards wide—

The other datum is again the suggestion that at first seemed so incredible, but for which support is piling up, a suggestion of a stationary source overhead—

That ten minutes later another fall of fishes occurred upon this same narrow strip of land.

Even arguing that a whirlwind may stand still axially, it discharges tangentially. Wherever the fishes came from it does not seem thinkable that some could have fallen and that others could have whirled even a tenth of a minute, then falling directly after the first to fall. Because of these evil circumstances the best adaptation was to laugh the whole thing off and say that someone had soused someone else with a pailful of water in which a few "very young" minnows had been caught up.

In the London *Times*, March 2, 1859, is a letter from Mr. Aaron Roberts, curate of St. Peter's, Carmathon. In this letter the fishes are said to have been about four inches long, but there is some question of species. I think, myself, that they were minnows and sticklebacks. Some persons, thinking them to be sea fishes, placed them in salt water, according to Mr. Roberts. "The effect is stated to have been almost instantaneous death." "Some were placed in fresh water. These seemed to thrive well." As to narrow distribution, we are told that the fishes fell "in and about the premises of Mr. Nixon." "It was not observed at the time that any fish fell in any other part of the neighborhood, save in the particular spot mentioned."

In the London *Times*, March 10, 1859, Vicar Griffith writes an account:

“The roofs of some houses were covered with them.”

In this letter it is said that the largest fishes were five inches long, and that these did not survive the fall.

*Report of the British Association, 1*859-158:

“The evidence of the fall of fish on this occasion was very conclusive. A specimen of the fish was exhibited and was found to be the *Gasterosteus leirus.*

Gasterosteus is the stickleback.

Altogether I think we have not a sense of total perdition, when we’re damned with the explanation that someone soused someone else with a pailful of water in which were thousands of fishes four or five inches long, some of which covered roofs of houses, and some of which remained ten minutes in the air. By way of contrast we offer our own acceptance:

That the bottom of a super-geographical pond had dropped out,

I have a great many notes upon the fall of fishes, despite the difficulty these records have in getting themselves published, but I pick out the instances that especially relate to our super-geographical acceptances, or to the Principles of Super-Geography: or data of things that have been in the air longer than acceptably could a whirlwind carry them; that have fallen with a distribution narrower than is attributable to a whirlwind; that have fallen for a considerable length of time upon the same narrow area of land.

These three factors indicate, somewhere not far aloft, a region of inertness to this earth’s gravitation, of course, however, a region that, by the flux and variation of all things, must at times be susceptible-but, afterward, our heresy will bifurcate—

In amiable accommodation to the crucifixion it’ll get, I think—

But so impressed are we with the datum that, though there have been many reports of small frogs that have fallen from the sky, not one report upon a fall of tadpoles is findable, that to these circumstances another adjustment must be made.

Apart from our three factors of indication, an extraordinary observation is the fall of living things without injury to them. The devotees of St. Isaac explain that they fall upon thick grass and so survive: but Sir James Emerson Tennant, in his *History of Ceylon,* tells of a fall of fishes upon gravel, by which they were seemingly uninjured. Something else apart from our three main interests is a phenomenon that looks like what one might call an alternating series of falls of fishes, whatever the significance may be:

Meerut, India, July, 1824 (*Living Age*, 52-186); Fifeshire, Scotland, summer of 1824 (*Wernerian Nat. Hist. Soc. Trans.*, 5-575); Moradabad, India, July, 1826 (*Living Age*, 52-186); Ross-shire, Scotland, 1828 *{Living Age*, 52-186); Moradabad, India, July 20, 1829 (*Lin. Soc. Trans.*, *1*6-764); Perthshire, Scotland (*Living Age*, 52-186); Argyleshire, Scotland, 1830, March 9, 1830 (*Recreative Science*, 3-339); Feridpoor, India, Feb. 19, 1830 (*Jour. Asiatic Soc. of Bengal*, 2-650).

A psycho-tropism that arises here—disregarding serial significance —or mechanical, unintelligent, repulsive reflex—is that the fishes of India did not fall from the sky; that they were found upon the ground after torrential rains, because streams had overflowed and had then receded.

In the region of Inertness that we think we can conceive of, or a zone that is to this earth's gravitation very much like the neutral zone of a magnet's attraction, we accept that there are bodies of water and also clear spaces—bottoms of ponds dropping out—very interesting ponds, having no earth at bottom—vast drops of water afloat in what is called space—fishes and deluges of water falling—

But also other areas, in which fishes—however they got there: a matter that we'll consider—remain and dry, or even putrefy, then sometimes falling by atmospheric dislodgment.

After a "tremendous deluge of rain, one of the heaviest falls on record" (*All the Year Round*, 8-255) at Rajkote, India, July 25, 1850, "the ground was found literally covered with fishes."

The word "found" is agreeable to the repulsions of the conventionalists and their concept of an overflowing stream—but, according to Dr. Buist, some of these fishes were "found" on the tops of haystacks.

Ferrel (*A Popular Treatise*, p. 414) tells of a fall of living fishes— some of them having been placed in a tank, where they survived— that occurred in India, about 20 miles south of Calcutta, Sept. 20, 1839. A witness of this fall says:

"The most strange thing which ever struck me was that the fish did not fall helter-skelter, or here and there, but they fell in a straight line, not more than a cubit in breadth." See *Living Age*, 52-186.

Amer. Jour. Sci., *1*-32-199:

That, according to testimony taken before a magistrate, a fall occurred, Feb. 19, 1830, near Feridpoor, India, of many fishes, of various sizes—some whole and fresh and others "mutilated and putrefying." Our reflex to

those who would say that, in the climate of India, it would not take long for fishes to putrefy, is—that high in the air, the climate of India is not torrid. Another peculiarity of this fall is that some of the fishes were much larger than others. Or to those who hold out for segregation in a whirlwind, or that objects, say, twice as heavy as others would be separated from the lighter, we point out that some of these fishes were twice as heavy as others.

In the *Journal of the Asiatic Society of Bengal*, 2-650, depositions of witnesses are given:

"Some of the fish were fresh, but others were rotten and without heads."

"Among the number which I got, five were fresh and the rest stinking and headless."

They remind us of His Grace's observation of some pages back.

According to Dr. Buist, some of these fishes weighed one and a half pounds each and others three pounds.

A fall of fishes at Futtepoor, India, May 16, 1833:

"They were all dead and dry." (Dr. Buist, *Living Age*, 52-186.)

India is far away: about 1830 was long ago.

Nature, Sept. 19, 1918-46:

A correspondent writes, from the Dove Marine Laboratory, Cuttercoats, England, that, at Hindon, a suburb of Sunderland, Aug. 24, 1918, hundreds of small fishes, identified as sand eels, had fallen—

Again the small area: about 60 by 30 yards.

The fall occurred during a heavy rain that was accompanied by thunder—or indications of disturbance aloft—but by no visible lightning. The sea is close to Hindon, but if you try to think of these fishes having described a trajectory in a whirlwind from the ocean, consider this remarkable datum:

That, according to witnesses, the fall upon this small area occupied ten minutes.

I cannot think of a clearer indication of a direct fall from a stationary source.

And:

"The fish were all dead, and indeed stiff and hard, when picked up, immediately after the occurrence."

By all of which I mean that we have only begun to pile up our data of things that fall from a stationary source overhead: we'll have to take up the subject from many approaches before our acceptance, which seems quite as

rigorously arrived at as ever has been a belief, can emerge from the accursed.

I don't know how much the horse and the barn will help us to emerge: but, if ever anything did go up from this earth's surface and stay up—those damned things may have:

Monthly Weather Review, May, 1878:

In a tornado, in Wisconsin, May 23, 1878, "a barn and a horse were carried completely away, and neither horse nor barn, nor any portion of either have since been found."

After that, which would be a little strong were it not for a steady improvement in our digestions that I note as we go along, there is little of the bizarre or the unassimilable in the turtle that hovered six months or so over a small town in Mississippi:

Monthly Weather Review, May, 1894:

That, May 11, 1894, at Vicksburg, Miss., fell a small piece of alabaster; that, at Bovina, eight miles from Vicksburg, fell a gopher turtle.

They fell in a hailstorm.

This item was widely copied at the time: for instance, *Nature,* one of the volumes of 1894, page 430, and *Jour. Roy. Met. Soc,* 20-273. As to discussion—not a word. Or Science and its continuity with Presbyterianism—data like this are damned at birth. The *Weather Review* does sprinkle, or baptize, or attempt to save, this infant—but in all the meteorological literature that I have gone through, after that date—not a word, except mention once or twice. The Editor of the *Review* says:

"An examination of the weather map shows that these hailstorms occur on the south side of a region of cold northerly winds, and were but a small part of a series of similar storms; apparently some special local whirls or gusts carried heavy objects from this earth's surface up to the cloud regions."

Of all incredibilities that we have to choose from, I give first place to a notion of a whirlwind pouncing upon a region and scrupulously selecting a turtle and a piece of alabaster. This time, the other mechanical thing "there in the first place" cannot rise in response to its stimulus: it is resisted in that these objects were coated with ice—month of May in a southern state. If a whirl-wind at all, there must have been very limited selection: there is no record of the fall of other objects. But there is no attempt in the *Review* to specify a whirlwind.

These strangely associated things were remarkably separated.

They fell eight miles apart.

Then—as if there were real reasoning—they must have been high to fall with such divergence, or one of them must have been carried partly horizontally eight miles farther than the other. But either supposition argues for power more than that of a local whirl or gust, or argues for a great, specific disturbance, of which there is no record—for the month of May, 1894.

Nevertheless—as if I really were reasonable—I do feel that I have to accept that this turtle had been raised from this earth's surface, somewhere near Vicksburg—because the gopher turtle is common in the southern states.

Then I think of a hurricane that occurred in the state of Mississippi weeks or months before May 11, 1894.

No—I don't look for it—and inevitably find it.

Or that things can go up so high in hurricanes that they stay up indefinitely—but may, after a while, be shaken down by storms. Over and over have we noted the occurrence of strange falls in storms. So then that the turtle and the piece of alabaster may have had far different origins—from different worlds, perhaps— have entered a region of suspension over this earth—wafting near each other—long duration—final precipitation by atmospheric disturbance—with hail—or that hailstones, too, when large, are phenomena of suspension of long duration: that it is highly unacceptable that the very large ones could become so great only in falling from the clouds.

Over and over has the note of disagreeableness, or of putrefaction, been struck—long duration. Other indications of long duration.

I think of a region somewhere above this earth's surface in which gravitation is inoperative and is not governed by the square of the distance—quite as magnetism is negligible at a very short distance from a magnet. Theoretically the attraction of a magnet should decrease with the square of the distance, but the falling-off is found to be almost abrupt at a short distance.

I think that things raised from this earth's surface to that region have been held there until shaken down by storms—

The Super-Sargasso Sea.

Derelicts, rubbish, old cargoes from inter-planetary wrecks; things cast out into what is called space by convulsions of other planets, things from the times of the Alexanders, Caesars and Napoleons of Mars and Jupiter and Neptune; things raised by this earth's cyclones: horses and barns and elephants and flies and dodoes, moas, and pterodactyls; leaves from modern trees and leaves of the Carboniferous era—all, however, tending to disintegrate into homogeneous-looking muds or dusts, red or black or yellow— treasure-troves for the palaeontologists and for the archaeologists — accumulations of centuries—cyclones of Egypt, Greece, and Assyria — fishes dried and hard, there a short time: others there long enough to putrefy —

But the omnipresence of Heterogeneity—or living fishes, also— ponds of fresh water: oceans of salt water.

As to the Law of Gravitation, I prefer to take one simple stand:

Orthodoxy accepts the correlation and equivalence of forces:

Gravitation is one of these forces.

All other forces have phenomena of repulsion and of inertness irrespective of distance, as well as of attraction.

But Newtonian Gravitation admits attraction only:

Then Newtonian Gravitation can be only one-third acceptable even to the orthodox, or there is denial of the correlation and equivalence of forces.

Or still simpler:

Here are the data.

Make what you will, yourself, of them.

In our Intermediatist revolt against homogeneous, or positive, explanations, or our acceptance that the all-sufficing cannot be less than universality, besides which, however, there would be nothing to suffice, our expression upon the Super-Sargasso Sea, though it harmonizes with data of fishes that fall as if from a stationary source— and, of course, with other data, too—is inadequate to account for two peculiarities of the falls of frogs:

That never has a fall of tadpoles been reported;

That never has a fall of full-grown frogs been reported—

Always frogs a few months old.

It sounds positive, but if there be such reports they are somewhere out of my range of reading.

But tadpoles would be more likely to fall from the sky than would frogs, little or big, if such falls be attributed to whirlwinds; and more likely to fall from the Super-Sargasso Sea if, though very tentatively and provisionally, we accept the Super-Sargasso Sea.

Before we take up an especial expression upon the fall of immature and larval forms of life to this earth, and the necessity then of conceiving of some factor besides mere stationariness or suspension or stagnation, there are other data that are similar to data of falls of fishes.

*Science Gossip, 1*886-238:

That small snails, of a land species, had fallen near Redruth, Cornwall, July 8, 1886, "during a heavy thunderstorm": roads and fields strewn with them, so that they were gathered up by the hatful: none seen to fall by the writer of this account: snails said to be "quite different to any previously known in this district."

But, upon page 282, we have better orthodoxy. Another correspondent writes that he had heard of the supposed fall of snails: that he had supposed that all such stories had gone the way of witch stories; that, to his astonishment, he had read an account of this absurd story in a local newspaper of "great and deserved repute."

"I thought I should for once like to trace the origin of one of these fabulous tales."

Our own acceptance is that justice cannot be in an intermediate existence, in which there can be approximation only to justice or to injustice; that to be fair is to have no opinion at all; that to be honest is to be uninterested; that to investigate is to admit prejudice; that nobody has ever really investigated anything, but has always sought positively to prove or to disprove something that was conceived of, or suspected, in advance.

"As I suspected," says this correspondent, "I found that the snails were of a familiar land-species"—that they had been upon the ground "in the first place."

He found that the snails had appeared after the rain: that "astonished rustics had jumped to the conclusion that they had fallen."

He met one person who said that he had seen the snails fall.

"This was his error," says the investigator.

In the *Philosophical Magazine,* 58-310, there is an account of snails said to have fallen at Bristol in a field of three acres, in such quantities that they were shoveled up. It is said that the snails "may be considered as a local

species." Upon page 457, another correspondent says that the numbers had been exaggerated, and that in his opinion they had been upon the ground in the first place. But that there had been some unusual condition aloft comes out in his observation upon "the curious azure-blue appearance of the sun, at the time."

Nature, 47-278:

That, according to *Das Wetter*, December, 1892, upon Aug. 9, 1892, a yellow cloud appeared over Paderborn, Germany. From this cloud, fell a torrential rain, in which were hundreds of mussels. There is no mention of whatever may have been upon the ground in the first place, nor of a whirlwind.

Lizards—said to have fallen on the sidewalks of Montreal, Canada, Dec. 28, 1857. (*Notes and Queries*, 8-6-104.)

In the *Scientific American*, 3-112, a correspondent writes, from South Granville, N. Y., that, during a heavy shower, July 3, 1860, he heard a peculiar sound at his feet, and looking down, saw a snake lying as if stunned by a fall. It then came to life. Gray snake, about a foot long.

These data have any meaning or lack of meaning or degree of damnation you please: but, in the matter of the fall that occurred at Memphis, Tennessee, occur some strong significances. Our quasi-reasoning upon this subject applies to all segregations so far considered.

Monthly Weather Review, Jan. 15, 1877:

That, in Memphis, Tenn., Jan. 15, 1877, rather strictly localized, or "in a space of two blocks," and after a violent storm in which the rain "fell in torrents," snakes were found. They were crawling on sidewalks, in yards, and in streets, and in masses—but "none were found on roofs or any other elevation above ground" and "none were seen to fall."

If you prefer to believe that the snakes had always been there, or had been upon the ground in the first place, and that it was only that something occurred to call special attention to them, in the streets of Memphis, Jan. 15, 1877—why, that's sensible: that's the common sense that has been against us from the first.

It is not said whether the snakes were of a known species or not, but that "when first seen, they were of a dark brown, almost black." Blacksnakes, I suppose.

If we accept that these snakes did fall, even though not seen to fall by all the persons who were out sight-seeing in a violent storm, and had not been

in the streets crawling loose or in thick tangled masses, in the first place;

If we try to accept that these snakes had been raised from some other part of this earth's surface in a whirlwind;

If we try to accept that a whirlwind could segregate them—

We accept the segregation of other objects raised in that whirl-wind.

Then, near the place of origin, there would have been a fall of heavier objects that had been snatched up with the snakes—stones, fence rails, limbs of trees. Say that the snakes occupied the next gradation, and would be the next to fall. Still farther would there have been separate falls of lightest objects: leaves, twigs, tufts of grass.

In the *Monthly Weather Review* there is no mention of other falls said to have occurred anywhere in January, 1877.

Again ours is the objection against such selectiveness by a whirl-wind. Conceivably a whirlwind could scoop out a den of hibernating snakes, with stones and earth and an infinitude of other débris, snatching up dozens of snakes—I don't know how many to a den— hundreds maybe—but, according to the account of this occurrence in the *New York Times*, there were thousands of them; alive; from one foot to eighteen inches in length. The *Scientific American,* 36-86, records the fall, and says that there were thousands of them. The usual whirlwind-explanation is given—"but in what locality snakes exist in such abundance is yet a mystery."

This matter of enormousness of numbers suggests to me something of a migratory nature—but that snakes in the United States do not migrate in the month of January, if ever.

As to falls or flutterings of winged insects from the sky, prevailing notions of swarming would seem explanatory enough: nevertheless, in instances of ants, there are some peculiar circumstances.

*L'Astronomie, 1*889-353:

Fall of fishes, June 13, 1889, in Holland; ants, Aug. 1, 1889, Strasbourg; little toads, Aug. 2, 1889, Savoy.

Fall of ants, Cambridge, England, summer of 1874—"some were wingless." (*Scientific American,* 30-193.) Enormous fall of ants, Nancy, France, July 21, 1887—"most of them were wingless." (*Nature,* 36-349.) Fall of enormous, unknown ants—size of wasps— Manitoba, June, 1895. (*Sci. Amer.,* 72-385.)

However, our expression will be:

That wingless, larval forms of life, in numbers so enormous that migration from some place external to this earth is suggested, have fallen from the sky.

That these "migrations"—if such can be our acceptance—have occurred at a time of hibernation and burial far in the ground of larvae in the northern latitudes of this earth; that there is significance in recurrence of these falls in the last of January—or that we have the square of an incredibility in such a notion as that of selection of larvae by whirlwinds, compounded with selection of the last of January.

I accept that there are "snow worms" upon this earth—whatever their origin may have been. In the *Proc. Acad. Nat. Sci. of Philadelphia, 1*899-125, there is a description of yellow worms and black worms that have been found together on glaciers in Alaska. Almost positively were there no other forms of insect-life upon these glaciers, and there was no vegetation to support insect-life, except microscopic organisms. Nevertheless the description of this probably polymorphic species fits a description of larvae said to have fallen in Switzerland, and less definitely fits another description. There is no opposition here, if our data of falls are clear. Frogs of every-day ponds look like frogs said to have fallen from the sky—except the whitish frogs of Birmingham. However, all falls of larvae have not positively occurred in the last of January:

London *Times,* April 14, 1837:

That, in the parish of Bramford Speke, Devonshire, a large number of black worms, about three-quarters of an inch in length, had fallen in a snowstorm.

In Timb's *Year Book, 1*877-26, it is said that, in the winter of 1876, at Christiania, Norway, worms were found crawling upon the ground. The occurrence is considered a great mystery, because the worms could not have come up from the ground, inasmuch as the ground was frozen at the time, and because they were reported from other places, also, in Norway.

Immense number of black insects in a snowstorm, in 1827, at Pakroff, Russia. (*Scientific American,* 30-193.)

Fall, with snow, at Orenburg, Russia, Dec. 14, 1830, of a multitude of small, black insects, said to have been gnats, but also said to have had flea-like motions. (*Amer. Jour. Sci., 1*-22-375.)

Large number of worms found in a snowstorm, upon the surface of snow about four inches thick, near Sangerfield, N. Y., Nov. 18, 1850 (*Scientific*

American, 6-96). The writer thinks that the worms had been brought to the surface of the ground by rain, which had fallen previously.

Scientific American, Feb. 21, 1891:

"A puzzling phenomenon has been noted frequently in some parts of the Valley Bend District, Randolph County, Va., this winter. The crust of the snow has been covered two or three times with worms resembling the ordinary cut worms. Where they come from, unless they fall with the snow is inexplicable." In the *Scientific American,* March 7, 1891, the Editor says that similar worms had been seen upon the snow near Utica, N. Y., and in Oneida and Herkimer Counties; that some of the worms had been sent to the Department of Agriculture at Washington. Again two species, or polymorphism. According to Prof. Riley, it was not polymorphism, "but two distinct species"—which, because of our data, we doubt. One kind was larger than the other: color-differences not distinctly stated. One is called the larvae of the common soldier beetle and the other "seems to be a variety of the bronze cut worm." No attempt to explain the occurrence in snow.

Fall of great numbers of larvae of beetles, near Mortagne, France, May, 1858. The larvae were inanimate as if with cold. (*Annales Société Entomologique de France, 1*858.)

*Trans. Ent. Soc. of London, 1*871-183, records "snowing of larvae," in Silesia, 1806; "appearance of many larvae on the snow," in Saxony, 1811; "larvae found alive on the snow," 1828; larvae and snow which "fell together," in the Eifel, Jan. 30, 1847; "fall of insects," Jan. 24, 1849, in Lithuania; occurrence of larvae estimated at 300,000 on the snow in Switzerland, in 1856. The compiler says that most of these larvae live underground, or at the roots of trees; that whirlwinds uproot trees, and carry away the larvae— conceiving of them as not held in masses of frozen earth —all as neatly detachable as currants in something. In the *Revue et Magasin de Zoologie, 1*849-72, there is an account of the fall in Lithuania, Jan. 24, 1849—that black larvae had fallen in enormous numbers.

Larvae thought to have been of beetles, but described as "caterpillars," not seen to fall, but found crawling on the snow, after a snowstorm, at Warsaw, Jan. 20, 1850. (*All the Year Round,* 8-253.)

Flammarion (*The Atmosphere,* p. 414) tells of a fall of larvae that occurred Jan. 30, 1869, in a snowstorm, in Upper Savoy: "They could not have been hatched in the neighborhood, for, during the days preceding, the temperature had been very low"; said to have been of a species common in

the south of France. In *La Science Pour Tous*, 14-183, it is said that with these larvae there were developed insects.

L'Astronomie, *1*890-313:

That, upon the last of January, 1890, there fell, in a great tempest, in Switzerland, incalculable numbers of larvae: some black and some yellow; numbers so great that hosts of birds were attracted.

Altogether we regard this as one of our neatest expressions for external origins and against the whirlwind explanation. If an exclusionist says that, in January, larvae were precisely and painstakingly picked out of frozen ground, in incalculable numbers, he thinks of a tremendous force—disregarding its refinements: then if origin and precipitation be not far apart, what becomes of an infinitude of other débris, conceiving of no time for segregation?

If he thinks of a long translation—all the way from the south of France to Upper Savoy, he may think then of a very fine sorting over by differences of specific gravity—but in such a fine selection, larvae would be separated from developed insects.

As to differences in specific gravity—the yellow larvae that fell in Switzerland January, 1890, were three times the size of the black larvae that fell with them. In accounts of this occurrence, there is no denial of the fall.

Or that a whirlwind never brought them together and held them together and precipitated them and only them together—

That they came from Genesistrine.

There's no escape from it. We'll be persecuted for it. Take it or leave it—

Genesistrine.

The notion is that there is somewhere aloft a place of origin of life relatively to this earth. Whether it's the planet Genesistrine, or the moon, or a vast amorphous region super-jacent to this earth, or an island in the Super-Sargasso Sea, should perhaps be left to the researches of other super—or extra—geographers. That the first unicellular organisms may have come here from Genesistrine—or that men or anthropomorphic beings may have come here before amoebae: that, upon Genesistrine, there may have been an evolution expressible in conventional biologic terms, but that evolution upon this earth has been—like evolution in modern Japan—induced by external influences; that evolution, as a whole, upon this earth, has been a process of population by immigration or by bombardment. Some notes I have upon remains of men and animals encysted, or covered with clay or

stone, as if fired here as projectiles, I omit now, because it seems best to regard the whole phenomenon as a tropism—as a geotropism—probably atavistic, or vestigial, as it were, or something still continuing long after expiration of necessity; that, once upon a time, all kinds of things came here from Genesistrine, but that now only a few kinds of bugs and things, at long intervals, feel the inspiration.

Not one instance have we of tadpoles that have fallen to this earth. It seems reasonable that a whirlwind could scoop up a pond, frogs and all, and cast down the frogs somewhere else: but, then, more reasonable that a whirlwind could scoop up a pond, tadpoles and all—because tadpoles are more numerous in their season than are the frogs in theirs: but the tadpole-season is earlier in the spring, or in a time that is more tempestuous. Thinking in terms of causation—as if there were real causes—our notion is that, if X is likely to cause Y, but is more likely to cause Z, but does not cause Z, X is not the cause of Y. Upon this quasi-sorites, we base our acceptance that the little frogs that have fallen to this earth are not products of whirlwinds: that they came from externality, or from Genesistrine.

I think of Genesistrine in terms of biologic mechanics: not that somewhere there are persons who collect bugs in or about the last of January and frogs in July and August, and bombard this earth, any more than do persons go through northern regions, catching and collecting birds, every autumn, then casting them southward.

But atavistic, or vestigial, geotropism in Genesistrine—or a million larvae start crawling, and a million little frogs start hopping— knowing no more what it's all about than we do when we crawl to work in the morning and hop away at night.

I should say, myself, that Genesistrine is a region in the Super-Sargasso Sea, and that parts of the Super-Sargasso Sea have rhythms of susceptibility to this earth's attraction.

8

I ACCEPT that, when there are storms, the damnedest of excluded, excommunicated things—things that are leprous to the faithful—are brought down—from the Super-Sargasso Sea—or from what for convenience we call the Super-Sargasso Sea—which by no means has been taken into full acceptance yet.

That things are brought down by storms, just as, from the depths of the sea things are brought up by storms. To be sure it is orthodoxy that storms have little, if any, effect below the waves of the ocean—but—of course—only to have an opinion is to be ignorant of, or to disregard a contradiction, or something else that modifies an opinion out of distinguishability.

Symons' Meteorological Magazine, 47-180:

That, along the coast of New Zealand, in regions not subject to submarine volcanic action, deep-sea fishes are often brought up by storms.

Iron and stones that fall from the sky; and atmospheric disturbances:

"There is absolutely no connection between the two phenomena." (*Symons.)*

The orthodox belief is that objects moving at planetary velocity would, upon entering this earth's atmosphere, be virtually unaffected by hurricanes; might as well think of a bullet swerved by someone fanning himself. The only trouble with the orthodox reasoning is the usual trouble—its phantom-dominant—its basing upon a myth— data we've had, and more we'll have, of things in the sky having no independent velocity.

There are so many storms and so many meteors and meteorites that it would be extraordinary if there were no concurrences. Nevertheless so many of these concurrences are listed by Prof. Baden-Powell (*Rept. Brit. Assoc., 1*850-54) that one—notices.

See *Rept. Brit. Assoc., 1*860—other instances.

The famous fall of stones at Siena, Italy, 1794—"in a violent storm."

See *Greg's Catalogues*—many instances. One that stands out is— "bright ball of fire and light in a hurricane in England, Sept. 2, 1786." The remarkable datum here is that this phenomenon was visible forty minutes.

That's about 800 times the duration that the orthodox give to meteors and meteorites.

See the *Annual Register*—many instances.

In *Nature*, Oct. 25, 1877, and the London *Times*, Oct. 15, 1877, something that fell in a gale of Oct. 14, 1877, is described as a "huge ball of green fire." This phenomenon is described by another correspondent, in *Nature*, 17-10, and an account of it by another correspondent was forwarded to *Nature* by W. F. Denning.

There are so many instances that some of us will revolt against the insistence of the faithful that it is only coincidence, and accept that there is connection of the kind called causal. If it is too difficult to think of stones and metallic masses swerved from their courses by storms, if they move at high velocity, we think of low velocity, or of things having no velocity at all, hovering a few miles above this earth, dislodged by storms, and falling luminously.

But the resistance is so great here, and "coincidence" so insisted upon that we'd better have some more instances:

Aerolite in a storm at St. Leonards-on-sea, England, Sept. 17, 1885—no trace of it found (*Annual Register, 1*885); meteorite in a gale, March 1, 1886, described in the *Monthly Weather Review*, March, 1886; meteorite in a thunderstorm, off coast of Greece, Nov. 19, 1899 (*Nature*, 61-111); fall of a meteorite in a storm, July 7, 1883, near Lachine, Quebec (*Monthly Weather Review*, July, 1883); same phenomenon noted in *Nature*, 28-319; meteorite in a whirl-wind, Sweden, Sept. 24, 1883 (*Nature*, 29-15).

London Roy. Soc. Proc., 6-276:

A triangular cloud that appeared in a storm, Dec. 17, 1852; a red nucleus, about half the apparent diameter of the moon, and a long tail; visible 13 minutes; explosion of the nucleus.

Nevertheless, in *Science Gossip*, n.s., 6-65, it is said that, though meteorites have fallen in storms, no connection is supposed to exist between the two phenomena, except by the ignorant peasantry.

But some of us peasants have gone through the *Report of the British Association, 1*852. Upon page 239, Dr. Buist, who had never heard of the Super-Sargasso Sea, says that, though it is difficult to trace connection between the phenomena, three aerolites had fallen in five months, in India, during thunderstorms, in 1851 (may have been 1852). For accounts by witnesses, see page 229 of the *Report.*

Or—we are on our way to account for “thunderstones.”

It seems to me that, very strikingly here, is borne out the general acceptance that ours is only an intermediate existence, in which there is nothing fundamental, or nothing final to take as a positive standard to judge by.

Peasants believed in meteorites.

Scientists excluded meteorites.

Peasants believe in “thunderstones.”

Scientists exclude “thunderstones.”

It is useless to argue that peasants are out in the fields, and that scientists are shut up in laboratories and lecture rooms. We cannot take for a real base that, as to phenomena with which they are more familiar, peasants are more likely to be right than are scientists: a host of biologic and meteorologic fallacies of peasants rises against us.

I should say that our “existence” is like a bridge—except that that comparison is in static terms—but like the Brooklyn Bridge, upon which multitudes of bugs are seeking a fundamental—coming to a girder that seems firm and final—but the girder is built upon supports. A support then seems final. But it is built upon underlying structures. Nothing final can be found in all the bridge, because the bridge itself is not a final thing in itself, but is a relationship between Manhattan and Brooklyn. If our “existence” is a relationship between the Positive Absolute and the Negative Absolute, the quest for finality in it is hopeless: everything in it must be relative, if the “whole” is not a whole, but is, itself, a relation.

In the attitude of Acceptance, our pseudo-base is:

Cells of an embryo are in the reptilian era of the embryo;

Some cells feel stimuli to take on new appearances.

If it be of the design of the whole that the next era be mammalian, those cells that turn mammalian will be sustained against resistance, by inertia, of all the rest, and will be relatively right, though not finally right, because they, too, in time will have to give way to characters of other eras of higher development.

If we are upon the verge of a new era, in which Exclusionism must be overthrown, it will avail thee not to call us base-born and frowsy peasants.

In our crude, bucolic way, we now offer an outrage upon common sense that we think will some day be an unquestioned common-place:

That manufactured objects of stone and iron have fallen from the sky:

That they have been brought down from a state of suspension, in a region of inertness to this earth's attraction, by atmospheric disturbances.

The "thunderstone" is usually "a beautifully polished, wedge-shaped piece of greenstone," says a writer in the *Cornhill Magazine,* 50-517. It isn't: it's likely to be of almost any kind of stone, but we call attention to the skill with which some of them have been made. Of course this writer says it's all superstition. Otherwise he'd be one of us crude and simple sons of the soil.

Conventional damnation is that stone implements, already on the ground —"on the ground in the first place"—are found near where lightning was seen to strike: that are supposed by astonished rustics, or by intelligence of a low order, to have fallen in or with lightning.

Throughout this book, we class a great deal of science with bad fiction. When is fiction bad, cheap, low? If coincidence is overworked. That's one way of deciding. But with single writers coincidence seldom is overworked: we find the excess in the subject at large. Such a writer as the one of the *Cornhill Magazine* tells us vaguely of beliefs of peasants: there is no massing of instance after instance after instance. Here ours will be the method of mass formation.

Conceivably lightning may strike the ground near where there was a wedge-shaped object in the first place: again and again and again: lightning striking ground near wedge-shaped object in China; lightning striking ground near wedge-shaped object in Scotland; lightning striking ground near wedge-shaped object in Central Africa: coincidence in France; coincidence in Java; coincidence in South America—

We grant a great deal but note a tendency to restlessness. Nevertheless this is the psycho-tropism of science to all "thunderstones" said to have fallen luminously.

As to greenstone, it is in the island of Jamaica, where the notion is general that axes of a hard greenstone fall from the sky—"during the rains." (*Jour. Inst. Jamaica,* 2-4.) Some other time we shall inquire into this localization of objects of a specific material. "They are of a stone nowhere else to be found in Jamaica." (*Notes and Queries,* 2-8-24.)

In my own tendency to exclude, or in the attitude of one peasant or savage who thinks he is not to be classed with other peasants or savages, I am not very much impressed with what natives think. It would be hard to tell why. If the word of a Lord Kelvin carries no more weight, upon

scientific subjects, than the word of a Sitting Bull, unless it be in agreement with conventional opinion—I think it must be because savages have bad table manners. However, my snobbishness, in this respect, loosens up somewhat before very widespread belief by savages and peasants. And the notion of "thunder-stones" is as wide as geography itself.

The natives of Burma, China, Japan, according to Blinkenberg (*Thunder Weapons*, p. 100)—not, of course, that Blinkenberg accepts one word of it—think that carved stone objects have fallen from the sky, because they think they have seen such objects fall from the sky. Such objects are called "thunderbolts" in these countries. They are called "thunderstones" in Moravia, Holland, Belgium, France, Cambodia, Sumatra, and Siberia. They're called "storm stones" in Lausitz; "sky arrows" in Slavonia; "thunder axes" in England and Scotland; "lightning stones" in Spain and Portugal; "sky axes" in Greece; "lightning flashes" in Brazil; "thunder teeth" in Amboina.

The belief is as widespread as is belief in ghosts and witches, which only the superstitious deny today.

As to beliefs by North American Indians, Tyler gives a list of references (*Primitive Culture*, 2-237). As to South American Indians—"Certain stone hatchets are said to have fallen from the heavens." (*Jour. Amer. Folk Lore*, 17-203.)

If you, too, revolt against coincidence after coincidence after coincidence, but find our interpretation of "thunderstones" just a little too strong or rich for digestion, we recommend the explanation of one, Tallius, written in 1649:

"The naturalists say they are generated in the sky by fulgurous exhalation conglobed in a cloud by the circumfused humor."

Of course the paper in the *Cornhill Magazine* was written with no intention of trying really to investigate this subject, but to deride the notion that worked-stone objects have ever fallen from the sky. A writer in the *Amer. Jour. Sci., 1*-21-325, read this paper and thinks it remarkable "that any man of ordinary reasoning powers should write a paper to prove that thunderbolts do not exist."

I confess that we're a little flattered by that.

Over and over:

"It is scarcely necessary to suggest to the intelligent reader that thunderstones are a myth."

We contend that there is a misuse of a word here: we admit that only we are intelligent upon this subject, if by intelligence is meant the inquiry of inequilibrium, and that all other intellection is only mechanical reflex—of course that intelligence, too, is mechanical, but less orderly and confined: less obviously mechanical—that as an acceptance of ours becomes firmer and firmer-established, we pass from the state of intelligence to reflexes in ruts. An odd thing is that intelligence is usually supposed to be creditable. It may be in the sense that it is mental activity trying to find out, but it is confession of ignorance. The bees, the theologians, the dogmatic scientists are the intellectual aristocrats. The rest of us are plebeians, not yet graduated to Nirvana, or to the instinctive and suave as differentiated from the intelligent and crude.

Blinkenberg gives many instances of the superstition of “thunderstones” which flourishes only where mentality is in a lamentable state—or universally. In Malacca, Sumatra, and Java, natives say that stone axes have often been found under trees that have been struck by lightning. Blinkenberg does not dispute this, but says it is coincidence: that the axes were of course upon the ground in the first place: that the natives jumped to the conclusion that these carved stones had fallen in or with lightning. In Central Africa, it is said that often have wedge-shaped, highly polished objects of stone, described as “axes,” been found sticking in trees that have been struck by lightning—or by what seemed to be lightning. The natives, rather like the unscientific persons of Memphis, Tenn., when they saw snakes after a storm, jumped to the conclusion that the “axes” had not always been sticking in the trees. Livingstone (*Last Journal,* pages 83, 89, 442, 448) says that he had never heard of stone implements used by natives of Africa. A writer in the *Report of the Smithsonian Institution, 1*877-308, says that there are a few.

That they are said, by the natives, to have fallen in thunderstorms.

As to luminosity, it is my lamentable acceptance that bodies falling through this earth’s atmosphere, if not warmed even, often fall with a brilliant light, looking like flashes of lightning. This matter seems important: we’ll take it up later, with data.

In Prussia, two stone axes were found in the trunks of trees, one under the bark. (Blinkenberg, *Thunder Weapons,* p. 100.)

The finders jumped to the conclusion that the axes had fallen there.

Another stone ax—or wedge-shaped object of worked stone—said to have been found in a tree that had been struck by something that looked like lightning. (*Thunder Weapons*, p. 71.)

The finder jumped to the conclusion.

Story told by Blinkenberg, of a woman, who lived near Kulsb-jaergene, Sweden, who found a flint near an old willow—"near her house." I emphasize "near her house" because that means familiar ground. The willow had been split by something.

She jumped.

Cow killed by lightning, or by what looked like lightning (Isle of Sark, near Guernsey). The peasant who owned the cow dug up the ground at the spot and found a small greenstone "ax." Blinken-berg says that he jumped to the conclusion that it was this object that had fallen luminously, killing the cow.

*Reliquary, 1*867-208:

A flint ax found by a farmer, after a severe storm—described as a "fearful storm"—by a signal staff, which had been split by something. I should say that nearness to a signal staff may be considered familiar ground.

Whether he jumped, or arrived at the conclusion by a more leisurely process, the farmer thought that the flint object had fallen in the storm.

In this instance we have a lamentable scientist with us. It's impossible to have positive difference between orthodoxy and heresy: somewhere there must be a merging into each other, or an overlapping. Nevertheless, upon such a subject as this, it does seem a little shocking. In most works upon meteorites, the peculiar, sulphurous odor of things that fall from the sky is mentioned. Sir John Evans (*Stone Implements*, p. 57) says—with extraordinary reasoning powers, if he could never have thought such a thing with ordinary reasoning powers—that this flint object "proved to have been the bolt, by its peculiar smell when broken."

If it did so prove to be, that settles the whole subject. If we prove that only one object of worked stone has fallen from the sky, all piling up of further reports is unnecessary. However, we have already taken the stand that nothing settles anything; that the disputes of ancient Greece are no nearer solution now than they were several thousand years ago—all because, in a positive sense, there is nothing to prove or solve or settle. Our object is to be more nearly real than our opponents. Wideness is an aspect of the Universal. We go on widely. According to us the fat man is nearer

godliness than is the thin man. Eat, drink, and approximate to the Positive Absolute. Beware of negativeness, by which we mean indigestion.

The vast majority of "thunderstones" are described as "axes," but Meunier (*La Nature, 1*892-2-381) tells of one that was in his possession; said to have fallen at Ghardia, Algeria, contrasting "profoundment" (pear-shaped) with the angular outlines of ordinary meteorites. The conventional explanation that it had been formed as a drop of molten matter from a larger body seems reasonable to me; but with less agreeableness I note its fall in a thunderstorm, the datum that turns the orthodox meteorologist pale with rage, or induces a slight elevation of his eyebrows, if you mention it to him.

Meunier tells of another "thunderstone" said to have fallen in North Africa. Meunier, too, is a little lamentable here: he quotes a soldier of experience that such objects fall most frequently in the deserts of Africa.

Rather miscellaneous now:

"Thunderstone" said to have fallen in London, April, 1876: weight about 8 pounds: no particulars as to shape (Timb's *Year Book, 1*877-246).

"Thunderstone" said to have fallen at Cardiff, Sept. 26, 1916 (London *Times*, Sept. 28, 1916). According to *Nature*, 98-95, it was coincidence; only a lightning flash had been seen.

Stone that fell in a storm, near St. Albans, England: accepted by the Museum of St. Albans; said, at the British Museum, not to be of "true meteoritic material." (*Nature*, 80-34.)

London *Times*, April 26, 1876:

That, April 20, 1876, near Wolverhampton, fell a mass of meteoritic iron during a heavy fall of rain. An account of this phenomenon in *Nature, 1*4-272, by H. S. Maskelyne, who accepts it as authentic. Also, see *Nature, I*3-531.

For three other instances, see the *Scientific American*, 47-194; 52-83; 68-325.

As to wedge-shape larger than could very well be called an "ax":

Nature, 30-300:

That, May 27, 1884, at Tysnas, Norway, a meteorite had fallen: that the turf was torn up at the spot where the object had been supposed to have fallen; that two days later "a very peculiar stone" was found near by. The description is—"in shape and size very like the fourth part of a large Stilton cheese."

It is our acceptance that many objects and different substances have been brought down by atmospheric disturbance from what— only as a matter of convenience now, and until we have more data—we call the Super-Sargasso Sea; however, our chief interest is in objects that have been shaped by means similar to human handicraft.

Description of the "thunderstones" of Burma (*Proc. Asiatic Soc. of Bengal, 1*869-183): said to be of a kind of stone unlike any other found in Burma; called "thunderbolts" by the natives. I think there's a good deal of meaning in such expressions as "unlike any other found in Burma"—but that if they had said anything more definite, there would have been unpleasant consequences to writers in the 19th century.

More about the "thunderstones" of Burma, in the *Proc. Soc. Antiq. of London,* 2-3-97. One of them, described as an "adze," was exhibited by Captain Duff, who wrote that there was no stone like it in its neighborhood.

Of course it may not be very convincing to say that because a stone is unlike neighboring stones it had foreign origin—also we fear it is a kind of plagiarism: we got it from the geologists, who demonstrate by this reasoning the foreign origin of erratics. We fear we're a little gross and scientific at times.

But it's my acceptance that a great deal of scientific literature must be read between the lines. It's not everyone who has the lament ableness of a Sir John Evans. Just as a great deal of Voltaire's meaning was inter-linear, we suspect that a Captain Duff merely hints rather than to risk having a Prof. Lawrence Smith fly at him and call him "a half-insane man." Whatever Captain Duff's meaning may have been, and whether he smiled like a Voltaire when he wrote it, Captain Duff writes of "the extremely soft nature of the stone, rendering it equally useless as an offensive or defensive weapon."

Story, by a correspondent, in *Nature*, 34-53, of a Malay, of "considerable social standing"—and one thing about our data is that, damned though they be, they do so often bring us into awful good company—who knew of a tree that had been struck, about a month before, by something in a thunderstorm. He searched among the roots of this tree and found a "thunderstone." Not said whether he jumped or leaped to the conclusion that it had fallen: process likely to be more leisurely in tropical countries. Also I'm afraid his way of reasoning was not very original: just so were fragments of the Bath-furnace meteorite, accepted by orthodoxy, discovered.

We shall now have an unusual experience. We shall read of some reports of extraordinary circumstances that were investigated by a man of science —not of course that they were really investigated by him, but that his phenomena occupied a position approximating higher to real investigation than to utter neglect. Over and over we read of extraordinary occurrences—no discussion; not even a comment afterward findable; mere mention occasionally—burial and damnation.

The extraordinary and how quickly it is hidden away.

Burial and damnation, or the obscurity of the conspicuous.

We did read of a man who, in the matter of snails, did travel some distance to assure himself of something that he had suspected in advance; and we remember Prof. Hitchcock, who had only to smite Amherst with the wand of his botanical knowledge, and lo! two fungi sprang up before night; and we did read of Dr. Gray and his thousands of fishes from one pailful of water—but these instances stand out; more frequently there was no "investigation." We now have a good many reported occurrences that were "investigated." Of things said to have fallen from the sky, we make, in the usual scientific way, two divisions: miscellaneous objects and substances, and symmetric objects attributable to beings like human beings, sub-dividing into—wedges, spheres, and disks.

Jour. Roy. Met. Soc, 14-207:

That, July 2, 1866, a correspondent to a London newspaper wrote that something had fallen from the sky, during a thunderstorm of June 30, 1866, at Notting Hill. Mr. G. T. Symons, of *Symons' Meteorological Magazine,* investigated, about as fairly, and with about as unprejudiced a mind, as anything ever has been investigated.

He says that the object was nothing but a lump of coal: that next door to the home of the correspondent coal had been unloaded the day before. With the uncanny wisdom of the stranger upon unfamiliar ground that we have noted before, Mr. Symons saw that the coal reported to have fallen from the sky, and the coal unloaded more prosaically the day before, were identical. Persons in the neighborhood, unable to make this simple identification, had bought from the correspondent pieces of the object reported to have fallen from the sky. As to credulity, I know of no limits for it—but when it comes to paying out money for credulity—oh, no standards to judge by, of course —just the same—

The trouble with efficiency is that it will merge away into excess. With what seems to me to be super-abundance of convincingness, Mr. Symons then lugs another character into his little comedy:

That it was all a hoax by a chemist's pupil, who had filled a capsule with an explosive, and "during the storm had thrown the burning mass into the gutter, so making an artificial thunderbolt."

Or even Shakespeare, with all his inartistry, did not lug in King Lear to make Hamlet complete.

Whether I'm lugging in something that has no special meaning, myself, or not, I find that this storm of June 30, 1866, was peculiar. It is described in the London *Times*, July 2, 1866: that "during the storm, the sky in many places remained partially clear while hail and rain were falling." That may have more meaning when we take up the possible extra-mundane origin of some hailstones, especially if they fall from a cloudless sky. Mere suggestion, not worth much, that there may have been falls of extra-mundane substances, in London, June 30, 1866.

Clinkers, said to have fallen, during a storm, at Kilburn, July 5, 1877:

According to the *Kilburn Times*, July 7, 1877, quoted by Mr. Symons, a street had been "literally strewn," during the storm, with a mass of clinkers, estimated at about two bushels: sizes from that of a walnut to that of a man's hand—"pieces of the clinkers can be seen at the *Kilburn Times* office."

If these clinkers, or cinders, were refuse from one of the super-mercantile constructions from which coke and coal and ashes occasionally fall to this earth, or, rather, to the Super-Sargasso Sea, from which dislodgment by tempests occurs, it is intermediatistic to accept that they must merge away somewhere with local phenomena of the scene of precipitation. If a red-hot stove should drop from a cloud into Broadway, someone would find that at about the time of the occurrence, a moving van had passed, and that the moving men had tired of the stove, or something—that it had not been really red-hot, but had been rouged instead of blacked, by some absent minded housekeeper. Compared with some of the scientific explanations that we have encountered, there's considerable restraint, I think, in that one.

Mr. Symons learned that in the same street—he emphasizes that it was a short street—there was a fire-engine station. I had such an impression of him hustling and bustling around at Notting Hill, searching cellars until he found one with newly arrived coal in it; ringing door bells, exciting a whole

neighborhood, calling up to second-story windows, stopping people in the streets, hotter and hotter on the trail of a wretched imposter of a chemist's pupil. After his efficiency at Notting Hill, we'd expect to hear that he went to the station, and—something like this:

"It is said that clinkers fell, in your street, at about ten minutes past four o'clock, afternoon of July fifth. Will you look over your records and tell me where your engine was at about ten minutes past four, July fifth?"

Mr. Symons says:

"I think that most probably they had been raked out of the steam fire-engine."

June 20, 1880, it was reported that a "thunderstone" had struck the house at 180 Oakley Street, Chelsea, falling down the chimney, into the kitchen grate.

Mr. Symons investigated.

He describes the "thunderstone" as an "agglomeration of brick, soot, unburned coal, and cinder."

He says that, in his opinion, lightning had flashed down the chimney, and had fused some of the brick of it.

He does think it remarkable that the lightning did not then scatter the contents of the grate, which were disturbed only as if a heavy body had fallen. If we admit that climbing up the chimney to find out is too rigorous a requirement for a man who may have been large, dignified and subject to expansions, the only unreasonableness we find in what he says—as judged by our more modern outlook, is:

"I suppose that no one would suggest that bricks are manufactured in the atmosphere."

Sounds a little unreasonable to us, because it is so of the positivistic spirit of former times, when it was not so obvious that the highest incredibility and laughability must merge away with the "proper"—as the *Sci. Am. Sup.* would say. The preposterous is always interpretable in terms of the "proper," with which it must be continuous—or—clay-like masses such as have fallen from the sky—tremendous heat generated by their velocity—they bake— bricks.

We begin to suspect that Mr. Symons exhausted himself at Notting Hill. It's a warning to efficiency-fanatics.

Then the instance of three lumps of earthy matter, found upon a well-frequented path, after a thunderstorm, at Reading, July 3, 1883. There are *so*

many records of the fall of earthy matter from the sky that it would seem almost uncanny to find resistance here, were we not so accustomed to the uncompromising stands of orthodoxy— which, in our metaphysics, represent good, as attempts, but evil in their insufficiency. If I thought it necessary, I'd list one hundred and fifty instances of earthy matter said to have fallen from the sky. It is his antagonism to atmospheric disturbance associated with the fall of things from the sky that blinds and hypnotizes a Mr. Symons here. This especial Mr. Symons rejects the Reading substance because it was not "of true meteoritic material." It's uncanny—or it's not uncanny at all, but universal—if you don't take something for a standard of opinion, you can't have any opinion at all: but, if you do take a standard, in some of its applications it must be preposterous. The carbonaceous meteorites, which are unquestioned—though avoided, as we have seen—by orthodoxy, are more glaringly of untrue meteoritic material than was this substance of Reading. Mr. Symons says that these three lumps were upon the ground "in the first place."

Whether these data are worth preserving or not, I think that the appeal that this especial Mr. Symons makes is worthy of a place in the museum we're writing. He argues against belief in all external origins "for our credit as Englishmen." He is a patriot, but I think that these foreigners had a small chance "in the first place" for hospitality from him.

Then comes a "small lump of iron (two inches in diameter)" said to have fallen, during a thunderstorm, at Brixton, Aug. 17, 1887. Mr. Symons says: "At present I cannot trace it."

He was at his best at Notting Hill: there's been a marked falling off in his later manner:

In the London *Times*, Feb. 1, 1888, it is said that a roundish object of iron had been found, "after a violent thunderstorm," in a garden at Brixton, Aug. 17, 1887. It was analyzed by a chemist, who could not identify it as true meteoritic material. Whether a product of workmanship like human workmanship or not, this object is described as an oblate spheroid, about two inches across its major diameter. The chemist's name and address are given: Mr. J. James Morgan: Ebbw Vale.

Garden—familiar ground—I suppose that in Mr. Symons' opinion this symmetric object had been upon the ground "in the first place," though he neglects to say this. But we do note that he described this object as a "lump," which does not suggest the spheroidal or symmetric. It is our

notion that the word “lump” was, because of its meaning of amorphousness, used purposely to have the next datum stand alone, remote, without similars. If Mr. Symons had said that there had been a report of another round object that had fallen from the sky, his readers would be attracted by an agreement. He distracts his readers by describing in terms of the unprecedented—

“Iron cannon ball.”

It was found in a manure heap, in Sussex, after a thunderstorm.

However, Mr. Symons argues pretty reasonably, it seems to me, that, given a cannon ball in a manure heap, in the first place, lightning might be attracted by it, and, if seen to strike there, the untutored mind, or mentality below the average, would leap or jump, or proceed with less celerity, to the conclusion that the iron object had fallen.

Except that—if every farmer isn’t upon very familiar ground—or if every farmer doesn’t know his own manure heap as well as Mr. Symons knew his writing desk—

Then comes the instance of a man, his wife, and his three daughters, at Casterton, Westmoreland, who were looking out at their lawn, during a thunderstorm, when they “considered,” as Mr. Symons expresses it, that they saw a stone fall from the sky, kill a sheep, and bury itself in the ground.

They dug.

They found a stone ball.

Symons:

Coincidence. It had been there in the first place.

This object was exhibited at a meeting of the Royal Meteorological Society by Mr. C. Carus-Wilson. It is described in the *Journal’s* list of exhibits as a “sandstone” ball. It is described as “sandstone” by Mr. Symons.

Now a round piece of sandstone may be almost anywhere in the ground —in the first place—but, by our more or less discreditable habit of prying and snooping, we find that this object was rather more complex and of material less commonplace. In snooping through *Knowledge,* Oct. 9,1885, we read that this “thunderstone” was in the possession of Mr. C. Carus-Wilson, who tells the story of the witness and his family—the sheep killed, the burial of something in the earth, the digging, and the finding. Mr. C. Carus-Wilson describes the object as a ball of hard, ferruginous quartzite,

about the size of a cocoanut, weight about twelve pounds. Whether we're feeling around for significance or not, there is a suggestion not only of symmetry but of structure in this object: it had an external shell, separated from a loose nucleus. Mr. Carus-Wilson attributes this cleavage to unequal cooling of the mass.

My own notion is that there is very little deliberate misrepresentation in the writings of scientific men: that they are quite as guiltless in intent as are other hypnotic subjects. Such a victim of induced belief reads of a stone ball said to have fallen from the sky. Mechanically in his mind arise impressions of globular lumps, or nodules, of sandstone, which are common almost everywhere. He assimilates the reported fall with his impressions of objects in the ground, in the first place. To an intermediatist, the phenomena of intellection are only phenomena of universal process localized in human minds. The process called "explanation" is only a local aspect of universal assimilation. It looks like materialism: but the intermediatist holds that interpretation of the immaterial, as it is called, in terms of the material, as it is called, is no more rational than interpretation of the "material" in terms of the "immaterial": that there is in quasi-existence neither the material nor the immaterial, but approximations one way or the other. But so hypnotic quasi-reasons: that globular lumps of sandstone are common. Whether he jumps or leaps, or whether only the frowsy and base-born are so athletic, his is the impression, by assimilation, that this especial object is a ball of sandstone. Or human mentality: its inhabitants are conveniences. It may be that Mr. Symons' paper was written before this object was exhibited to the members of the Society, and with the charity with which, for the sake of diversity, we intersperse our malices, we are willing to accept that he "investigated" something that he had never seen. But whoever listed this object was uncareful: it is listed as "sandstone."

We're making excuses for them.

Really—as it were—you know, we're not quite so damned as we were.

One does not apologize for the gods and at the same time feel quite utterly prostrate before them.

If this were a real existence, and all of us real persons, with real standards to judge by, I'm afraid we'd have to be a little severe with some of these Mr. Symonses. As it is, of course, seriousness seems out of place.

We note an amusing little touch in the indefinite allusion to "a man," who with his un-named family, had "considered" that he had seen a stone fall.

The “man” was the Rev. W. Carus-Wilson, who was well-known in his day.

The next instance was reported by W. B. Tripp, F. R. M. S.— that, during a thunderstorm, a farmer had seen the ground in front of him plowed up by something that was luminous.

Dug.

Bronze ax.

My own notion is that an expedition to the North Pole could not be so urgent as that representative scientists should have gone to that farmer and there spent a summer studying this one reported occurrence. As it is—un-named farmer—somewhere—no date. The thing must stay damned.

Another specimen for our museum is a comment in *Nature* upon these objects: that they are “of an amusing character, thus clearly showing that they were of terrestrial, and not a celestial, character.” Just why celestiality, or that of it which, too, is only of Intermediateness should not be quite as amusing as terrestriality is beyond our reasoning powers, which we have agreed are not ordinary. Of course there is nothing amusing about wedges and spheres at all— or Archimedes and Euclid are humorists. It is that they were described derisively. If you’d like a little specimen of the standardization of orthodox opinion—

Amer. Met. Jour., 4-589:

“They are of an amusing character, thus clearly showing that they were of a terrestrial and not a celestial character.”

I’m sure—not positively, of course—that we’ve tried to be as easy going and lenient with Mr. Symons as his obviously scientific performance would permit. Of course it may be that sub-consciously we were prejudiced against him, instinctively classing him with St. Augustine, Darwin, St. Jerome, and Lyell. As to the “thunder-stones,” I think that he investigated them mostly “for the credit of Englishmen,” or in the spirit of the Royal Krakatoa Committee, or about as the commission from the French Academy investigated meteorites. According to a writer in *Knowledge*, 5-418, the Krakatoa Committee attempted not in the least to prove what had caused the atmospheric effects of 1883, but to prove—that Krakatoa did it.

Altogether I should think that the following quotation should be enlightening to anyone who still thinks that these occurrences were investigated not to support an opinion formed in advance:

In opening his paper, Mr. Symons say that he undertook his investigation as to the existence of “thunderstones,” or “thunderbolts” as he calls them

—“feeling certain that there was a weak point somewhere, inasmuch as ‘thunderbolts’ have no existence.”

We have another instance of the reported fall of a “cannon ball.” It occurred prior to Mr. Symons’ investigations, but is not mentioned by him. It was investigated, however. In the *Proc. Roy. Soc. Editi.*, 3-147, is the report of a “thunderstone,” “supposed to have fallen in Hampshire, Sept., 1852.” It was an iron cannon ball, or it was a “large nodule of iron pyrites or bisulphuret of iron.” No one had seen it fall. It had been noticed, upon a garden path, for the first time, after a thunderstorm. It was only a “supposed” thing, because— “It had not the character of any known meteorite.”

In the London *Times*, Sept. 16, 1852, appears a letter from Mr. George E. Bailey, a chemist of Andover, Hants. He says that, in a very heavy thunderstorm, of the first week of September, 1852, this iron object, had fallen in the garden of Mr. Robert Dowling, of Andover; that it had fallen upon a path “within six yards of the house.” It had been picked up “immediately” after the storm by Mrs. Dowling. It was about the size of a cricket ball: weight four pounds. No one had seen it fall. In the *Times*, Sept. 15, 1852, there is an account of this thunderstorm, which was of unusual violence.

There are some other data relative to the ball of quartz of Westmoreland. They’re poor things. There’s so little to them that they look like ghosts of the damned. However, ghosts, when multiplied, take on what is called substantiality—if the solidest thing conceivable, in quasi-existence, is only concentrated phantomosity. It is not only that there have been other reports of quartz that has fallen from the sky; there is another agreement. The round quartz object of Westmoreland, if broken open and separated from its loose nucleus, would be a round, hollow, quartz object. My pseudo position is that two reports of similar extraordinary occurrences, one from England and one from Canada—are interesting.

Proc. Canadian Institute, 3-7-8:

That, at the meeting of the Institute, of Dec. 1, 1888, one of the members, Mr. I. A. Livingstone, exhibited a globular quartz body which he asserted had fallen from the sky. It had been split open. It was hollow.

But the other members of the Institute decided that the object was spurious, because it was not of “true meteoritic material.”

No date; no place mentioned; we note the suggestion that it was only a geode, which had been upon the ground in the first place. Its crystalline lining was geode-like.

Quartz is upon the "index prohibitory" of Science. A monk who would read Darwin would sin no more than would a scientist who would admit that, except by the "up and down" process, quartz has ever fallen from the sky—but Continuity: it is not excommunicated if part of or incorporated in a baptized meteorite—St. Catherine's of Mexico, I think. It's as epicurean a distinction as any ever made by theologians. Fassig lists a quartz pebble, found in a hailstone *{Bibliography,* part 2-355). "Up and down," of course. Another object of quartzite was reported to have fallen, in the autumn of 1880, at Schroon Lake, N. Y.—said in the *Scientific American,* 43-272 to be a fraud—it was not—the usual. About the first of May, 1899, the newspapers published a story of a "snow-white" meteorite that had fallen, at Vincennes, Indiana. The Editor of the *Monthly Weather Review* (issue of April, 1899) requested the local observer, at Vincennes, to investigate. The Editor says that the thing was only a fragment of a quartz boulder. He says that anyone with at least a public school education should know better than to write that quartz has ever fallen from the sky.

Notes and Queries, 2-8-92:

That, in the Leyden Museum of Antiquities, there is a disk of quartz: 6 centimeters by 5 millimeters by about 5 centimeters; said to have fallen upon a plantation in the Dutch West Indies, after a meteoric explosion.

Bricks.

I think this is a vice we're writing. I recommend it to those who have hankered for a new sin. At first some of our data were of so frightful or ridiculous mien as to be hated, or eyebrowed, was only to be seen. Then some pity crept in? I think that we can now embrace bricks.

The baked-clay-idea was all right in its place, but it rather lacks distinction, I think. With our minds upon the concrete boats that have been building terrestrially lately, and thinking of wrecks that may occur to some of them, and of a new material for the deep-sea fishes to disregard—

Object that fell at Richland, South Carolina—yellow to gray— said to look like a piece of brick. (*Amer. Jour. Sci.,* 2-34-298.)

Pieces of "furnace-made brick" said to have fallen—in a hailstorm—at Padua, August, 1834. (*Edin. New Phil. Jour*., 19-87.) The writer offered an explanation that started another convention: that the fragments of brick had

been knocked from buildings by the hailstones. But there is here a concomitant that will be disagreeable to anyone who may have been inclined to smile at the now digestible-enough notion that furnace-made bricks have fallen from the sky. It is that in some of the hailstones—two per cent of them— that were found with the pieces of brick, was a light grayish powder.

Monthly Notices of the Royal Astronomical Society, 337-365:

Padre Sechi explains that a stone said to have fallen, in a thunderstorm, at Supino, Italy, September, 1875, had been knocked from a roof.

Nature, 33-153:

That it had been reported that a good-sized stone, of form clearly artificial, had fallen at Naples, November, 1885. The stone was described by two professors of Naples, who had accepted it as inexplicable but veritable. They were visited by Dr. H. Johnstone-Lavis, the correspondent to *Nature,* whose investigations had convinced him that the object was a "shoemaker's lapstone."

Now to us of the initiated, or to us of the wider outlook, there is nothing incredible in the thought of shoemakers in other worlds— but I suspect that this characterization is tactical.

This object of worked stone, or this shoemaker's lapstone, was made of Vesuvian lava, Dr. Johnstone-Lavis thinks: most probably of lava of the flow of 1631, from the La Scala quarries. We condemn "most probably" as bad positivism. As to the "men of position," who had accepted that this thing had fallen from the sky—"I have now obliged them to admit their mistake," says Dr. Johnstone-Lavis—or it's always the stranger in Naples who knows La Scala lava better than the natives know it.

Explanation:

That the thing had been knocked from, or thrown from, a roof.

As to attempt to trace the occurrence to any special roof—nothing said upon that subject. Or that Dr. Johnstone-Lavis called a carved stone a "lapstone," quite as Mr. Symons called a spherical object a "cannon ball": bent upon a discrediting incongruity:

Shoemaking and celestiality.

It is so easy to say that axes, or wedge-shaped stones found on the ground, were there in the first place, and that it is only coincidence that lightning should strike near one—but the credibility of coincidences decreases as the square root of their volume, I think. Our massed instances

speak too much of coincidences of coincidences. But the axes, or wedge-shaped objects that have been found in trees, are more difficult for orthodoxy. For instance, Arago accepts that such finds have occurred, but he argues that, if wedge-shaped stones have been found in tree trunks, so have toads been found in tree trunks—did the toads fall there?

Not at all bad for a hypnotic.

Of course, in our acceptance, the Irish are the Chosen People. It's because they are characteristically best in accord with the underlying essence of quasi-existence. M. Arago answers a question by asking another question. That's the only way a question can be answered in our Hibernian kind of an existence.

Dr. Bodding argued with the natives of the Santal Parganas, India, who said that cut and shaped stones had fallen from the sky, some of them lodging in tree trunks. Dr. Bodding, with orthodox notions of velocity of falling bodies, having missed, I suppose, some of the notes I have upon large hailstones, which, for size, have fallen with astonishingly low velocity, argued that anything falling from the sky would be "smashed to atoms." He accepts that objects of worked stone have been found in tree trunks, but he explains:

That the Santals often steal trees, but do not chop them down in the usual way, because that would be to make too much noise: they insert stone wedges, and hammer them instead: then, if they should be caught, wedges would not be the evidence against them that axes would be.

Or that a scientific man can't be desperate and reasonable too.

Or that a pickpocket, for instance, is safe, though caught with his hand in one's pocket, if he's gloved, say: because no court in the land would regard a gloved hand in the same way in which a bare hand would be regarded.

That there's nothing but intermediateness to the rational and the proposterous: that this status of our own ratiocinations is perceptible wherein they are upon the unfamiliar.

Dr. Bodding collected 50 of these shaped stones, said to have fallen from the sky, in the course of many years. He says that the Santals are a highly developed race, and for ages have not used stone implements—except in this one nefarious convenience to him.

All explanations are localizations. They fade away before the universal. It is difficult to express that black rains in England do not originate in the smoke of factories—less difficult to express that black rains of South Africa

do not. We utter little stress upon the absurdity of Dr. Bodding's explanation, because, if anything's absurd everything's absurd, or, rather, has in it some degree or aspect of absurdity, and we've never had experience with any state except something somewhere between ultimate absurdity and final reasonableness. Our acceptance is that Dr. Bodding's elaborate explanation does not apply to cut-stone objects found in tree trunks in other lands: we accept that for the general, a local explanation is inadequate.

As to "thunderstones" not said to have fallen luminously, and not said to have been found sticking in trees, we are told by faithful hypnotics that astonished rustics come upon prehistoric axes that have been washed into sight by rains, and jump to the conclusion that the things have fallen from the sky. But simple rustics come upon many prehistoric things: scrapers, pottery, knives, hammers. We have no record of rusticity coming upon old pottery after a rain, reporting the fall of a bowl from the sky.

Just now, my own acceptance is that wedge-shaped stone objects, formed by means similar to human workmanship, have often fallen from the sky. Maybe there are messages upon them. My acceptance is that they have been called "axes" to discredit them: or the more familiar a term, the higher the incongruity with vague concepts of the vast, remote, tremendous, unknown.

In *Notes and Queries*, 2-8-92, a writer says that he had a "thunderstone," which he had brought from Jamaica. The description is of a wedge-shaped object; not of an ax:

"It shows no mark of having been attached to a handle."

Of ten "thunderstones," figured upon different pages in Blinken-berg's book, nine show no sign of ever having been attached to a handle: one is perforated.

But in a report by Dr. C. Leemans, Director of the Leyden Museum of Antiquities, objects, said by the Japanese to have fallen from the sky, are alluded to throughout as "wedges." In the *Archaeologic Journal, 11-118*, in a paper upon the "thunderstones" of Java, the objects are called "wedges" and not "axes."

Our notion is that rustics and savages call wedge-shaped objects that fall from the sky, "axes": that scientific men, when it suits their purposes, can resist temptations to prolixity and pedantry, and adopt the simple: that they can be intelligible when derisive.

All of which lands us in a confusion, worse, I think, than we were in before we so satisfactorily emerged from the distresses of—butter and blood and ink and paper and punk and silk. Now it's cannon balls and axes and disks—if a "lapstone" be a disk—it's a flat stone, at any rate.

A great many scientists are good impressionists: they snub the impertinences of details. Had he been of a coarse, grubbing nature, I think Dr. Bodding could never have so simply and beautifully explained the occurrence of stone wedges in tree trunks. But to a realist, the story would be something like this:

A man who needed a tree, in a land of jungles, where, for some unknown reason, everyone's very selfish with his trees, conceives that hammering stone wedges makes less noise than does the chopping of wood: he and his descendants, in a course of many years, cut down trees with wedges, and escape penalty, because it never occurs to a prosecutor that the head of an ax is a wedge.

The story is like every other attempted positivism—beautiful and complete, until we see what it excludes or disregards; whereupon it becomes the ugly and incomplete—but not absolutely, because there is probably something of what is called foundation for it. Perhaps a mentally incomplete Santal did once do something of the kind. Story told to Dr. Bodding: in the usual scientific way, he makes a dogma of an aberration.

Or we did have to utter a little stress upon this matter, after all. They're so hairy and attractive, these scientists of the 19th century. We feel the zeal of a Sitting Bull when we think of their scalps. We shall have to have an expression of our own upon this confusing subject. We have expressions: we don't call them explanations: we've discarded explanations with beliefs. Though everyone who scalps is, in the oneness of allness, himself likely to be scalped, there is such a discourtesy to an enemy as the wearing of wigs.

Cannon balls and wedges, and what may they mean?

Bombardments of this earth—

Attempts to communicate—

Or visitors to this earth, long ago—explorers from the moon— taking back with them, as curiosities, perhaps, implements of this earth's prehistoric inhabitants—a wreck—a cargo of such things held for ages in suspension in the Super-Sargasso Sea—falling, or shaken, down occasionally by storms—

But, by preponderance of description, we cannot accept that "thunderstones" ever were attached to handles, or are prehistoric axes—

As to attempts to communicate with this earth by means of wedge-shaped objects especially adapted to the penetration of vast, gelatinous areas spread around this earth—

In the *Proc. Roy. Irish Acad.*, 9-337, there is an account of a stone wedge that fell from the sky, near Cashel, Tipperary, Aug. 2, 1865. The phenomenon is not questioned, but the orthodox preference is to call it, not ax-like, nor wedge-shaped, but "pyramidal." For data of other pyramidal stones said to have fallen from the sky, see *Rept. Brit. Assoc*., 1861-34. One fell at Segowolee, India, March 6, 1853. Of the object that fell at Cashel, Dr. Haughton says in the *Proceedings:* "A singular feature is observable in this stone, that I have never seen in any other:—the rounded edges of the pyramid are sharply marked by lines on the black crust, as perfect as if made by a ruler." Dr. Haughton's idea is that the marks may have been made by "some peculiar tension in the cooling." It must have been very peculiar, if in all aerolites not wedge-shaped, no such phenomenon had ever been observed. It merges away with one or two instances known, after Dr. Haughton's time, of seeming stratification in meteorites. Stratification in meteorites, however, is denied by the faithful.

I begin to suspect something else.

A whopper is coming.

Later it will be as reasonable, by familiarity, as anything else ever said.

If someone should study the stone of Cashel, as Champollion studied the Rosetta stone, he might—or, rather, would inevitably— find meaning in those lines, and translate them into English—

Nevertheless I begin to suspect something else: something more subtle and esoteric than graven characters upon stones that have fallen from the sky, in attempts to communicate. The notion that other worlds are attempting to communicate with this world is widespread: my own notion is that it is not attempt at all—that it was achievement centuries ago.

I should like to send out a report that a "thunderstone" had fallen, say, somewhere in New Hampshire—

And keep track of every person who came to examine that stone— trace down his affiliations—keep track of him—

Then send out a report that a "thunderstone" had fallen at Stockholm, say —

Would one of the persons who had gone to New Hampshire, be met again in Stockholm? But—what if he had no anthropological, lapidarían, or meteorological affiliations—but did belong to a secret society—

It is only a dawning credulity.

Of the three forms of symmetric objects that have, or haven't, fallen from the sky, it seems to me that the disk is the most striking. So far, in this respect, we have been at our worst—possibly that's pretty bad—but "lapstones" are likely to be of considerable variety of form, and something that is said to have fallen at sometime somewhere in the Dutch West Indies is profoundly of the unchosen.

Now we shall have something that is high up in the castes of the accursed:

*Comptes Rendus, 1*887-182:

That, upon June 20, 1887, in a "violent storm"—two months before the reported fall of the symmetric iron object of Brixton—a small stone had fallen from the sky at Tarbes, France: 13 millimeters in diameter; 5 millimeters thick; weight 2 grammes. Reported to the French Academy by M. Sudre, professor of the Normal School, Tarbes.

This time the old convenience "there in the first place" is too greatly resisted—the stone was covered with ice.

This object had been cut and shaped by means similar to human hands and human mentality. It was a disk of worked stone—"tres regulier." "Il a été assurement travaillé."

There's not a word as to any known whirlwind anywhere: nothing of other objects or débris that fell at or near this date, in France. The thing had fallen alone. But as mechanically as any part of a machine responds to its stimulus, the explanation appears in *Comptes Rendus* that this stone had been raised by a whirlwind and then flung down.

It may be that in the whole nineteenth century no event more important than this occurred. In *La Nature, 1*887, and in *L'Année Scientifique, 1*887, this occurrence is noted. It is mentioned in one of the summer numbers of *Nature, 1*887. Fassig lists a paper upon it in the *Annuaire de Soc. Met., 1*887.

Not a word of discussion.

Not a subsequent mention can I find.

Our own expression:

What matters it how we, the French Academy, or the Salvation Army may explain?

A disk of worked stone fell from the sky, at Tarbes, France, June 20, 1887.

9

MY own pseudo-conclusion:

That we've been damned by giants sound asleep, or by great scientific principles and abstractions that cannot realize themselves: that little harlots have visited their caprices upon us; that clowns, with buckets of water from which they pretend to cast thousands of good-sized fishes have anathematized us for laughing disrespectfully, because, as with all clowns, underlying buffoonery is the desire to be taken seriously; that pale ignorances, presiding over microscopes by which they cannot distinguish flesh from nostoc or fishes' spawn or frogs' spawn, have visited upon us their wan solemnities. We've been damned by corpses and skeletons and mummies, which twitch and totter with pseudo-life derived from conveniences.

Or there is only hypnosis. The accursed are those who admit they're the accursed.

If we be more nearly real we are reasons arraigned before a jury of dream-phantasms.

Of all meteorites in museums, very few were seen to fall. It is considered sufficient grounds for admission if specimens can't be accounted for in any way other than that they fell from the sky— as if in the haze of uncertainty that surrounds all things, or that is the essence of everything, or in the merging away of everything into something else, there could be anything that could be accounted for in only one way. The scientist and the theologian reason that if something can be accounted for in only one way, it is accounted for in that way—or logic would be logical, if the conditions that it imposes, but, of course, does not insist upon, could anywhere be found in quasi-existence. In our acceptance, logic, science, art, religion are, in our "existence," premonitions of a coming awakening, like dawning awarenesses of surroundings in the mind of a dreamer.

Any old chunk of metal that measures up to the standard of "true meteoritic material" is admitted by the museums. It may seem incredible that modern curators still have this delusion, but we suspect that the date on

one's morning newspaper hasn't much to do with one's modernity all day long. In reading Fletcher's catalogue, for instance, we learn that some of the best-known meteorites were "found in draining a field"—"found in making a road"—"turned up by the plow" occurs a dozen times. Someone fishing in Lake Okeechobee, brought up an object in his fishing net. No meteorite had ever been seen to fall near it. The U. S. National Museum accepts it.

If we have accepted only one of the data of "untrue meteoritic material"—one instance of "carbonaceous" matter—if it be too difficult to utter the word "coal"—we see that in this inclusion-exclusion, as in every other means of forming an opinion, false inclusion and false exclusion have been practiced by curators of museums.

There is something of ultra-pathos—of cosmic sadness—in this universal search for a standard, and in belief that one has been revealed by either inspiration or analysis, then the dogged clinging to a poor sham of a thing long after its insufficiency has been shown— or renewed hope and search for the special that can be true, or for something local that could also be universal. It's as if "true meteoritic material" were a "rock of ages" to some scientific men. They cling. But clingers cannot hold out welcoming arms.

The only seemingly conclusive utterance, or seemingly substantial thing to cling to, is a product of dishonesty, ignorance, or fatigue. All sciences go back and back, until they're worn out with the process, or until mechanical reaction occurs: then they move forward—as it were. Then they become dogmatic, and take for bases, positions that were only points of exhaustion. So chemistry divided and sub-divided down to atoms; then, in the essential insecurity of all quasi-constructions, it built up a system, which, to anyone so obsessed by his own hypnoses that he is exempt to the chemist's hypnoses, is perceptibly enough an intellectual anaemia built upon infinitesimal debilities.

In *Science*, n.s., 31-298, E. D. Hovey, of the American Museum of Natural History, asserts or confesses that often have objects of material such as fossiliferous limestone and slag been sent to him He says that these things have been accompanied by assurances that they have been seen to fall on lawns, on roads, in front of houses.

They are all excluded. They are not of true meteoritic material. They were on the ground in the first place. It is only by coincidence that lightning has struck, or that a real meteorite, which was unfindable, has struck near objects of slag and limestone.

Mr. Hovey says that the list might be extended indefinitely. That's a tantalizing suggestion of some very interesting stuff—

He says:

"But it is not worth while."

I'd like to know what strange, damned, excommunicated things have been sent to museums by persons who have felt convinced that they had seen what they may have seen, strongly enough to risk ridicule, to make up bundles, go to express offices, and write letters. I accept that over the door of every museum, into which such things enter, is written:

"Abandon Hope."

If a Mr. Symons mentions one instance of coal, or of slag or cinders, said to have fallen from the sky, we are not—except by association with the "carbonaceous" meteorites—strong in our impression that coal sometimes falls to this earth from coal-burning super-constructions up somewhere—

In *Comptes Rendus*, 91-197, M. Daubree tells the same story. Our acceptance, then, is that other curators could tell this same story. Then the phantomosity of our impression substantiates proportionately to its multiplicity. M. Daubree says that often have strange damned things been sent to the French museums, accompanied by assurances that they had been seen to fall from the sky. Especially to our interest, he mentions coal and slag.

Excluded.

Buried unnamed and undated in Science's potter's field.

I do not say that the data of the damned should have the same rights as the data of the saved. That would be justice. That would be of the Positive Absolute, and, though the ideal of, a violation of, the very essence of quasi-existence, wherein only to have the appearance of being is to express a preponderance of force one way or another—or inequilibrium, or inconsistency, or injustice.

Our acceptance is that the passing away of exclusionism is a phenomenon of the twentieth century: that gods of the twentieth century will sustain our notions be they ever so unwashed and frowsy. But, in our own expressions, we are limited, by the oneness of quasiness, to the very same methods by which orthodoxy established and maintains its now sleek, suave preposterousnesses. At any rate, though we are inspired by an especial subtle essence—or imponderable, I think—that pervades the twentieth century, we have not the superstition that we are offering anything

as a positive fact. Rather often we have not the delusion that we're any less superstitious and credulous than any logician, savage, curator, or rustic.

An orthodox demonstration, in terms of which we shall have some heresies, is that if things found in coal could have got there only by falling there—they fell there.

So, in the *Manchester Lit. and Phil. Soc. Mems.,* 2-9-306, it argued that certain roundish stones that have been found in coal are "fossil aerolites": that they had fallen from the sky, ages ago, when the coal was soft, because the coal had closed around them, showing no sign of entrance.

Proc. Soc. of Antiq. of Scotland, I-I-121 :

That, in a lump of coal, from a mine in Scotland, an iron instrument had been found—

"The interest attaching to this singular relic arises from the fact of its having been found in the heart of a piece of coal, seven feet under the surface."

If we accept that this object of iron was of workmanship beyond the means and skill of the primitive men who may have lived in Scotland when coal was forming there—

"The instrument was considered to be modern."

That our expression has more of realness, or higher approximation to realness, than has the attempt to explain that is made the *Proceedings:*

That in modern times someone may have bored for coal, and that his drill may have broken off in the coal it had penetrated.

Why he should have abandoned such easily accessible coal, I don't know. The important point is that there was no sign of boring: that this instrument was in a lump of coal that had closed around it so that its presence was not suspected, until the lump of coal was broken.

No mention can I find of this damned thing in any other publication. Of course there is an alternative here: the thing may not have fallen from the sky: if in coal-forming times, in Scotland, there were, indigenous to this earth, no men capable of making such an iron instrument, it may have been left behind by visitors from other worlds.

In an extraordinary approximation to fairness and justice, which is permitted to us, because we are quite as desirous to make acceptable that nothing can be proved as we are to sustain our own expressions, we note:

That in *Notes and Queries,* 11-1-408, there is an account of an ancient copper seal, about the size of a penny, found in chalk, at a depth of from

five to six feet, near Bredenstone, England. The design upon it is said to be of a monk kneeling before a virgin and child: a legend upon the margin is said to be: “St. Jordanis Monachi Spaldingie.”

I don’t know about that. It looks very desirable—undesirable to us.

There’s a wretch of an ultra-frowsy thing in the *Scientific American*, 7-298, which we condemn ourselves, if somewhere, because of the oneness of allness, the damned must also be the damning. It’s a newspaper story: that about the first of June, 1851, a powerful blast, near Dorchester, Mass., cast out from a bed of solid rock a bell-shaped vessel of an unknown metal: floral designs inlaid with silver; “art of some cunning workman.” The opinion of the Editor of the *Scientific American* is that the thing had been made by Tubal Cain, who was the first inhabitant of Dorchester. Though I fear that this is a little arbitrary, I am not disposed to fly rabidly at every scientific opinion.

Nature, 35-36:

A block of metal found in coal, in Austria, 1885. It is now in the Salsburg museum.

This time we have another expression. Usually our intermediatist attack upon provincial positivism is: Science, in its attempted positivism takes something such as “true meteoritic material” as a standard of judgment; but carbonaceous matter, except for its relative infrequency, is just as veritable a standard of judgment; carbonaceous matter merges away into such a variety of organic substances, that all standards are reduced to indistinguishability: if, then, there is no real standard against us, there is no real resistance to our own acceptances. Now our intermediatism is: Science takes “true meteoritic material” as a standard of admission; but now we have an instance that quite as truly makes “true meteoritic material” a standard of exclusion; or, then, a thing that denies itself is no real resistance to our own acceptances—this depending upon whether we have a datum of something of “true meteoritic material” that orthodoxy can never accept fell from the sky.

We’re a little involved here. Our own acceptance is upon a carved, geometric thing that, if found in a very old deposit, antedates human life, except, perhaps, very primitive human life, as an indigenous product of this earth: but we’re quite as much interested in the dilemma it made for the faithful.

It is of “true meteoritic material.” In L’*Astronomie, 1*887-114, it is said that, though so geometric, its phenomena so characteristic of meteorites

exclude the idea that it was the work of man.

As to the deposit—Tertiary coal.

Composition—iron, carbon, and a small quantity of nickel.

It has the pitted surface that is supposed by the faithful to be characteristic of meteorites.

For a full account of this subject, see *Comptes Rendus, 1*03-702. The scientists who examined it could reach no agreement. They bifurcated: then a compromise was suggested; but the compromise is a product of disregard:

That it was of true meteoritic material, and had not been shaped by man;

That it was not of true meteoritic material, but telluric iron that had been shaped by man;

That it was true meteoritic material that had fallen from the sky, but had been shaped by man, after its fall.

The data, one or more of which must be disregarded by each of these three explanations, are: “true meteoritic material” and surface markings of meteorites; geometric form; presence in an ancient deposit; material as hard as steel; absence upon this earth, in Tertiary times, of men who could work in material as hard as steel. It is said that, though of “true meteoritic material,” this object is virtually a steel object.

St. Augustine, with his orthodoxy, was never in—well, very much worse—difficulties than are the faithful here. By due disregard of a datum or so, our own acceptance that it was a steel object that had fallen from the sky to this earth, in Tertiary times, is not forced upon one. We offer ours as the only synthetic expression. For instance, in *Science Gossip, 1*887-58, it is described as a meteorite: in this account there is nothing alarming to the pious, because, though everything else is told, its geometric form is not mentioned.

It’s a cube. There is a deep incision all around it. Of its faces, two that are opposite are rounded.

Though I accept that our own expression can only rather approximate to Truth, by the wideness of its inclusions, and because it seems, of four attempts, to represent the only complete synthesis, and can be nullified or greatly modified by data that we, too, have somewhere disregarded, the only means of nullification that I can think of would be demonstration that this object is a mass of iron pyrites, which sometimes forms geometrically. But the analysis mentions not a trace of sulphur. Of course our weakness, or impositiveness, lies in that, by anyone to whom it would be agreeable to

find sulphur in this thing, sulphur would be found in it—by our own intermediatism there is some sulphur in everything, or sulphur is only a localization or emphasis of something that, unemphasized, is in all things.

So there have, or haven't, been found upon this earth things that fell from the sky, or that were left behind by extra-mundane visitors to this earth—

A yarn in the London *Times,* June 22, 1844: that some workmen, quarrying rock, close to the Tweed, about a quarter of a mile below Rutherford Mills, discovered a gold thread embedded in the stone at a depth of 8 feet: that a piece of the gold thread had been sent to the office of the *Kelso Chronicle.*

Pretty little thing; not at all frowsy; rather damnable.

London *Times,* Dec. 24, 1851:

That Hiram De Witt, of Springfield, Mass., returning from California, had brought with him a piece of auriferous quartz about the size of a man's fist. It was accidentally dropped—split open —nail in it. There was a cut-iron nail, size of a six-penny nail, slightly corroded. "It was entirely straight and had a perfect head."

Or—California—ages ago, when auriferous quartz was forming—super-carpenter, million of miles or so up in the air—drops a nail.

To one not an intermediatist, it would seem incredible that this datum, not only of the damned, but of the lowest of the damned, or of the journalistic caste of the accursed, could merge away with something else damned only by disregard, and backed by what is called "highest scientific authority"—

Communication by Sir David Brewster (*Rept. Brit. Assoc.,* 1845-51):

That a nail had been found in a block of stone from Kingoodie Quarry, North Britain. The block in which the nail was found was nine inches thick, but as to what part of the quarry it had come from, there is no evidence—except that it could not have been from the surface. The quarry had been worked about twenty years. It consisted of alternate layers of hard stone and a substance called "till." The point of the nail, quite eaten with rust, projected into some "till," upon the surface of the block of stone. The rest of the nail lay upon the surface of the stone to within an inch of the head —that inch of it was embedded in the stone.

Although its caste is high, this is a thing profoundly of the damned—sort of a Brahmin as regarded by a Baptist. Its case was stated fairly; Brewster related all circumstances available to him— but there was no discussion at the meeting of the British Association: no explanation was offered—

Nevertheless the thing can be nullified—

But the nullification that we find is as much against orthodoxy in one respect as it is against our own expression that inclusion in quartz or sandstone indicates antiquity—or there would have to be a revision of prevailing dogmas upon quartz and sandstone and age indicated by them, if the opposing data should be accepted. Of course it may be contended by both the orthodox and us heretics that the opposition is only a yarn from a newspaper. By an odd combination, we find our two lost souls that have tried to emerge, chucked back to perdition by one blow:

Pop. Sci. News, 1884-41:

That, according to the *Carson Appeal*, there had been found in a mine, quartz crystals that could have had only 15 years in which to form: that, where a mill had been built, sandstone had been found, when the mill was torn down, that had hardened in 12 years: that in this sandstone was a piece of wood "with a nail in it."

*Annals of Scientific Discovery, I*853-71:

That, at the meeting of the British Association, 1853, Sir David Brewster had announced that he had to bring before the meeting an object "of so incredible a nature that nothing short of the strongest evidence was necessary to render the statement at all probable."

A crystal lens had been found in the treasure-house at Nineveh.

In many of the temples and treasure houses of old civilizations upon this earth have been preserved things that have fallen from the sky—or meteorites.

Again we have a Brahmin. This thing is buried alive in the heart of propriety: it is in the British Museum.

Carpenter, in *The Microscope and Its Revelations*, gives two drawings of it. Carpenter argues that it is impossible to accept that optical lenses had ever been made by the ancients. Never occurred to him—someone a million miles or so up in the air— looking through his telescope—lens drops out.

This does not appeal to Carpenter: he says that this object must have been an ornament.

According to Brewster, it was not an ornament, but "a true optical lens."

In that case, in ruins of an old civilization upon this earth, has been found an accursed thing that was, acceptably, not a product of any old civilization indigenous to this earth.

10

EARLY explorers have Florida mixed up with Newfoundland. But the confusion is worse than that still earlier. It arises ‘ from simplicity. Very early explorers think that all land westward is one land, India: awareness of other lands as well as India comes as a slow process. I do not now think of things arriving upon this earth from some especial other world. That was my notion when I started to collect our data. Or, as is a commonplace of observation, all intellection begins with the illusion of homogeneity. It’s one of Spencer’s data: we see homogeneousness in all things distant, or with which we have small acquaintance. Advance from the relatively homogeneous to the relatively heterogeneous is Spen-cerian Philosophy—like everything else, so-called: not that it was really Spencer’s discovery, but was taken from von Baer, who, in turn, was continuous with preceding evolutionary speculation. Our own expression is that all things are acting to advance to the homogeneous, or are trying to localize Homogeneousness. Homogeneous-ness is an aspect of the Universal, wherein it is a state that does not merge away into something else. We regard homogeneousness as an aspect of positiveness, but it *is* our acceptance that infinite frustrations of attempts to positivize manifest themselves in infinite heterogeneity: so that though things try to localize homogeneous-ness they end up in heterogeneity so great that it amounts to infinite dispersion or indistinguishability.

So all concepts are little attempted positivenesses, but soon have to give in to compromise, modification, nullification, merging away into indistinguishability—unless, here and there, in the world’s history, there may have been a super-dogmatist, who, for only an infinitesimal of time, has been able to hold out against heterogeneity or modification or doubt or “listening to reason,” or loss of identity —in which case—instant translation to heaven or the Positive Ab solute.

Odd thing about Spencer is that he never recognized that “homo-geneity,” “integration,” and “definiteness” are all words for the same state,

or the state that we call “positiveness.” What we call his mistake is in that he regarded “homogeneousness” as negative.

I began with a notion of some one other world, from which objects and substances have fallen to this earth; which had, or which, to less degree, has a tutelary interest in this earth; which is now attempting to communicate with this earth—modifying, because of data which will pile up later, into acceptance that some other world is not attempting but has been, for centuries, in communication with a sect, perhaps, or a secret society, or certain esoteric ones of this earth’s inhabitants.

I lose a great deal of hypnotic power in not being able to concentrate attention upon some one other world.

As I have admitted before I’m intelligent, as contrasted with the orthodox. I haven’t the aristocratic disregard of a New York curator or an Eskimo medicine-man.

I have to dissipate myself in acceptance of a host of other worlds: size of the moon, some of them: one of them, at least—tremendous thing: we’ll take that up later. Vast, amorphous aerial regions, to which such definite words as “worlds” and “planets” seem inapplicable. And artificial constructions that I have called “super-constructions”: one of them about the size of Brooklyn, I should say, offhand. And one or more of them wheel-shaped things a goodly number of square miles in area.

I think that earlier in this book, before we liberalized into embracing everything that comes along, your indignation, or indigestion would have expressed in the notion that, if this were so, astronomers would have seen these other worlds and regions and vast geometric constructions. You’d have had that notion: you’d have stopped there.

But the attempt to stop is saying “enough” to the insatiable. In cosmic punctuation there are no periods: illusion of periods is incomplete view of colons and semi-colons.

We can’t stop with the notion that if there were such phenomena, astronomers would have seen them. Because of our experience with suppression and disregard, we suspect, before we go into the subject at all, that astronomers have seen them; that navigators and meteorologists have seen them; that individual scientists and other trained observers have seen them many times—

That it is the System that has excluded data of them.

As to the Law of Gravitation, and astronomers' formulas, remember that these formulas worked out in the time of Laplace as well as they do now. But there are hundreds of planetary bodies now known that were then not known. So a few hundred worlds more of ours won't make any difference. Laplace knew of about only thirty bodies in this solar system: about six hundred are recognized now—

What are the discoveries of geology and biology to a theologian?

His formulas still work out as well as they ever did.

If the Law of Gravitation could be stated as a real utterance, it might be a real resistance to us. But we are told only that gravitation is gravitation. Of course to an intermediatist, nothing can be defined except in terms of itself—but even the orthodox, in what seems to me to be the innate premonitions of realness, not founded upon experience, agree that to define a thing in terms of itself is not real definition. It is said that by gravitation is meant the attraction of all things proportionately to mass and inversely as the square of the distance. Mass would mean inter-attraction holding together final particles, if there were final particles. Then, until final particles be discovered, only one term of this expression survives, or mass is attraction. But distance is only extent of mass, unless one holds out for absolute vacuum among planets, a position against which we could bring a host of data. But there is no possible means of expressing that gravitation is anything other than attraction. So there is nothing to resist us but such a phantom as— that gravitation is the gravitation of all gravitations proportionately to gravitation and inversely as the square of gravitation. In a quasi-existence, nothing more sensible than this can be said upon any so-called subject—perhaps there are higher approximations to ultimate sensibleness.

Nevertheless we seem to have a feeling that with the System against us we have a kind of resistance here. We'd have felt so formerly, at any rate: I think the Dr. Grays and Prof. Hitchcocks have modified our trustfulness toward indistinguishability. As to the perfection of this System that quasi-opposes us and the infallibility of its mathematics—as if there could be real mathematics in a mode of seeming where twice two are not four—we've been told over and over of their vindication in the discovery of Neptune.

I'm afraid that the course we're taking will turn out like every other development. We began humbly, admitting that we're of the damned—

But our eyebrows—

Just a faint flicker in them, or in one of them, every time we hear of the "triumphal discovery of Neptune"—this "monumental achievement of theoretical astronomy," as the text-books call it.

The whole trouble is that we've looked it up.

The text-books omit this:

That, instead of the orbit of Neptune agreeing with the calculations of Adams and Leverrier, it was so different—that Leverrier said that it was not the planet of his calculations.

Later it was thought best to say no more upon that subject.

The text-books omit this:

That, in 1846, everyone who knew a sine from a cosine was out sining and cosining for a planet beyond Uranus.

Two of them guessed right.

To some minds, even after Leverrier's own rejection of Neptune, the word "guessed" may be objectionable—but, according to Prof. Peirce, of Harvard, the calculations of Adams and Leverrier would have applied quite as well to positions many degrees from the position of Neptune.

Or for Prof. Peirce's demonstration that the discovery of Neptune was only a "happy accident," see *Proc. Amer. Acad. Sciences*, 1-65.

For references, see Lowell's *Evolution of Worlds.*

Or comets: another nebulous resistance to our own notions. As to eclipses, I have notes upon several of them that did not occur upon scheduled time, though with differences only of seconds—and one delightful lost soul, deep-buried, but buried in the ultra-respectable records of the Royal Astronomical Society, upon an eclipse that did not occur at all. That delightful, ultra-sponsored thing of perdition is too good and malicious to be dismissed with passing notice: we'll have him later.

Throughout the history of astronomy, every comet that has come back upon predicted time—not that, essentially, there was anything more abstruse about it than is a prediction that you can make of a postman's periodicities tomorrow—was advertised for all it was worth. It's the way reputations are worked up for fortune-tellers by the faithful. The comets that didn't come back—omitted or explained. Or Encke's comet. It came back slower and slower. But the astronomers explained. Be almost absolutely sure of that: they explained. They had it all worked out and formulated and "proved" why that comet was coming back slower and slower—and there the damn thing began coming faster and faster.

Halley's comet.

Astronomy—"the perfect science, as we astronomers like to call it." (Jacoby.)

It's my own notion that if, in a real existence, an astronomer could not tell one longitude from another, he'd be sent back to this purgatory of ours until he could meet that simple requirement.

Halley was sent to the Cape of Good Hope to determine its longitude. He got it degrees wrong. He gave to Africa's noble Roman promontory a retrousse twist that would take the pride out of any Kaffir.

We hear everlastingly of Halley's comet. It came back—maybe. But, unless we look the matter up in contemporaneous records, we hear nothing of—the Leonids, for instance. By the same methods as those by which Halley's comet was predicted, the Leonids were predicted. November, 1898—no Leonids. It was explained. They had been perturbed. They would appear in November, 1899. November, 1899—November, 1900—no Leonids.

My notion of astronomic accuracy:

Who could not be a prize marksman, if only his hits be recorded?

As to Halley's comet, of 1910—everybody now swears he saw it. He has to perjure himself: otherwise he'd be accused of having no interest in great, inspiring things that he's never given any attention to.

Regard this:

That there never is a moment when there is not some comet in the sky. Virtually there is no year in which several new comets are not discovered, so plentiful are they. Luminous fleas on a vast black dog—in popular impressions, there is no realization of the extent to which this solar system is flea-bitten.

If a comet have not the orbit that astronomers have predicted—perturbed. If—like Halley's comet—it be late—even a year late—perturbed. When a train is an hour late, we have small opinion of the predictions of timetables. When a comet's a year late, all we ask is—that it be explained. We hear of the inflation and arrogance of astronomers. My own acceptance is not that they are imposing upon us: that they are requiting us. For many of us priests no longer function to give us seeming rapport with Perfection, Infallibility—the Positive Absolute. Astronomers have stepped forward to fill a vacancy—with quasi-phantomosity—but, in our acceptance, with a higher approximation to substantiality than had the

attenuations that preceded them. I should say, myself, that all that we call progress is not so much response to “urge” as it is response to a hiatus—or if you want something to grow somewhere, dig out everything else in its area. So I have to accept that the positive assurances of astronomers are necessary to us, or the blunderings, evasions and disguises of astronomers would never be tolerated: that, given such latitude as they are permitted to take, they could not be very disastrously mistaken. Suppose the comet called Halley’s had not appeared—

Early in 1910, a far more important comet than the anæmic luminosity said to be Halley’s, appeared. It was so brilliant that it was visible in daylight. The astronomers would have been saved anyway. If this other comet did not have the predicted orbit— perturbation. If you’re going to Coney Island, and predict there’ll be a special kind of a pebble on the beach, I don’t see how you can disgrace yourself, if some other pebble will do just as well— because the feeble thing said to have been seen in 1910 was no more in accord with the sensational descriptions given out by astronomers in advance than is a pale pebble with a brick-red boulder.

I predict that next Wednesday, a large Chinaman, in evening clothes, will cross Broadway, at 42nd Street, at 9 P.M. He doesn’t, but a tubercular Jap in a sailor’s uniform does cross Broadway, at 35th Street, Friday, at noon. Well, a Jap is a perturbed Chinaman, and clothes are clothes.

I remember the terrifying predictions made by the honest and credulous astronomers, who must have been themselves hypnotized, or they could not have hypnotized the rest of us, in 1909. Wills were made. Human life might be swept from this planet. In quasi-existence, which is essentially Hibernian, that would be no reason why wills should not be made. The less excitable of us did expect at least some pretty good fireworks.

I have to admit that it is said that, in New York, a light was seen in the sky.

It was about as terrifying as the scratch of a match on the seat of some breeches half a mile away.

It was not on time.

Though I have heard that a faint nebulosity, which I did not see, myself, though I looked when I was told to look, was seen in the sky, it appeared several days after the time predicted.

A hypnotized host of imbeciles of us: told to look up at the sky: we did—like a lot of pointers hypnotized by a partridge.

The effect:

Almost everybody now swears that he saw Halley's comet, and that it was a glorious spectacle.

An interesting circumstance here is that seemingly we are trying to discredit astronomers because astronomers oppose us—that's not my impression. We shall be in the Brahmin caste of the hell of the Baptists. Almost all our data, in some regiments of this procession, are observations by astronomers, few of them mere amateur astronomers. It is the System that opposes us. It is the System that is suppressing astronomers. I think we pity them in their captivity. Ours is not malice—in a positive sense. It's chivalry— somewhat. Unhappy astronomers looking out from high towers in which they are imprisoned—we appear upon the horizon.

But, as I have said, our data do not relate to some especial other world. I mean very much what a savage upon an ocean island might vaguely think of in his speculations—not upon some other land, but complexes of continents and their phenomena: cities, factories in cities, means of communication—

Now all the other savages would know of a few vessels sailing in their regular routes, passing this island in regularized periodicities. The tendency in these minds would be expression of the universal tendency toward positivism—or Completeness—or conviction that these few regularized vessels constituted all. Now I think of some especial savage who suspects otherwise—because he's very backward and unimaginative and insensible to the beautiful ideals of the others: not piously occupied, like the others, in bowing before impressive-looking sticks of wood; dishonestly taking time for his speculations, while the others are patriotically witch-finding. So the other higher and nobler savages know about the few regularized vessels: know when to expect them; have their periodicities all worked out; just about when vessels will pass, or eclipse each other —explaining that all vagaries were due to atmospheric conditions.

They'd come out strong in explaining.

You can't read a book upon savages without noting what resolute explainers they are.

They'd say that all this mechanism was founded upon the mutual attraction of the vessels—deduced from the fall of a monkey from a palm tree—or, if not that, that devils were pushing the vessels— something of the kind.

Storms.

Debris, not from these vessels, cast up by the waves.

Disregarded.

How can one think of something and something else, too?

I'm in the state of mind of a savage who might find upon a shore, washed up by the same storm, buoyant parts of a piano and a paddle that was carved by cruder hands than his own: something light and summery from India, and a fur overcoat from Russia— or all science, though approximating wider and wider, is attempt to conceive of India in terms of an ocean island, and of Russia in terms of India so interpreted. Though I am trying to think of Russia and India in world-wide terms, I cannot think that that, or the universalizing of the local, is cosmic purpose. The higher idealist is the positivist who tries to localize the universal, and is in accord with cosmic purpose: the super-dogmatist of a local savage who can hold out, without a flurry of doubt, that a piano washed up on a beach is the trunk of a palm tree that a shark has bitten, leaving his teeth in it. So we fear for the soul of Dr. Gray, because he did not devote his whole life to that one stand that, whether possible or inconceivable, thousands of fishes had been cast from one bucket.

So, unfortunately for myself, if salvation be desirable, I look out widely but amorphously, indefinitely and heterogeneously. If I say I conceive of another world that is now in secret communication with certain esoteric inhabitants of this earth, I say I conceive of still other worlds that are trying to establish communication with all the inhabitants of this earth. I fit my notions to the data I find. That is supposed to be the right and logical and scientific thing to do; but it is no way to approximate to form, system, organization. Then I think I conceive of other worlds and vast structures that pass us by, within a few miles, without the slightest desire to communicate, quite as tramp vessels pass many islands without particularizing one from another. Then I think I have data of a vast construction that has often come to this earth, dipped into an ocean, submerged there a while, then going away—Why? I'm not absolutely sure. How would an Eskimo explain a vessel, sending ashore for coal, which is plentiful upon some Arctic beaches, though of unknown use to the natives, then sailing away, with no interest in the natives?

A great difficulty in trying to understand vast constructions that show no interest in us:

The notion that we must be interesting.

I accept that, though we're usually avoided, probably for moral reasons, sometimes this earth has been visited by explorers. I think that the notion that there have been extra-mundane visitors to China, within what we call the historic period, will be only ordinarily absurd, when we come to that datum.

I accept that some of the other worlds are of conditions very similar to our own. I think of others that are very different—-so that visitors from them could not live here—without artificial adaptations.

How some of them could breathe our attenuated air, if they came from a gelatinous atmosphere—

Masks.

The masks that have been found in ancient deposits.

Most of them are of stone, and are said to have been ceremonial regalia of savages—

But the mask that was found in Sullivan County, Missouri, in 1879 (*American Antiquarian,* 3-336).

It is made of iron and silver.

11

ONE of the damnedest in our whole saturnalia of the accursed—

Because it is hopeless to try to shake off an excommunication only by saying that we're damned by blacker things than ourselves; and that the damned are those who admit they're of the damned. Inertia and hypnosis are too strong for us. We say that: then we go right on admitting we're of the damned. It is only by being more nearly real that we can sweep away the quasi-things that oppose us. Of course, as a whole, we have considerable amor-phousness, but we are thinking now of "individual" acceptances. Wideness is an aspect of Universalness or Realness. If our syntheses disregard fewer data than do opposing syntheses—which are often not syntheses at all, but mere consideration of some one circumstance—less widely synthetic things fade away before us. Harmony is an aspect of the Universal, by which we mean Realness. If we approximate more highly to harmony among the parts of an expression and to all available circumstances of an occurrence, the self-contradictors turn hazy. Solidity is an aspect of realness. We pile them up, and we pile them up, or they pass and pass and pass: things that bulk large as they march by, supporting and solidifying one another—

And still, and for regiments to come, hypnosis and inertia rule us—

One of the damnedest of our data:

In the *Scientific American,* Sept. 10, 1910, Charles F. Holder writes:

"Many years ago, a strange stone resembling a meteorite, fell into the Valley of the Yaqui, Mexico, and the sensational story went from one end to the other of the country that a stone bearing human inscriptions had descended to the earth."

The bewildering observation here is Mr. Holder's assertion that this stone did fall. It seems to me that he must mean that it fell by dislodgment from a mountainside into a valley—but we shall see that it was such a marked stone that very unlikely would it have been unknown to dwellers in a valley, if it had been reposing upon a mountainside above them. It may have been

carelessness: intent may have been to say that a sensational story of a strange stone said to have fallen, etc.

This stone was reported by Major Frederick Burnham, of the British Army. Later Major Burnham revisited it, and Mr. Holder accompanied him, their purpose to decipher the inscriptions upon it, if possible.

"This stone was a brown, igneous rock, its longest axis about eight feet, and on the eastern face, which had an angle of about forty-five degrees, was the deep-cut inscription."

Mr. Holder says that he recognized familiar Mayan symbols in the inscription. His method was the usual method by which anything can be "identified" as anything else: that is to pick out whatever is agreeable and disregard the rest. He says that he has demonstrated that most of the symbols are Mayan. One of our inter-mediatist pseudo-principles is that any way of demonstrating anything is just as good a way of demonstrating anything else. By Mr. Holder's method we could demonstrate that we're Mayan—if that should be a source of pride to us. One of the characters upon this stone is a circle within a circle—similar character found by Mr. Holder is a Mayan manuscript. There are two 6's. 6's can be found in Mayan manuscripts. A double scroll. There are dots and there are dashes. Well, then, we, in turn, disregard the circle within a circle and the double scroll and emphasize that 6's occur in this book, and that dots are plentiful, and would be more plentiful if it were customary to use the small "i" for the first personal pronoun—that when it comes to dashes—that's demonstrated: we're Mayan.

I suppose the tendency is to feel that we're sneering at some valuable archæologic work, and that Mr. Holder did make a veritable identification.

He writes:

"I submitted the photographs to the Field Museum and the Smithsonian and one or two others, and, to my surprise, the reply was that they could make nothing out of it."

Our indefinite acceptance, by preponderance of three or four groups of museum-experts against one person, is that a stone bearing inscriptions unassimilable with any known language upon this earth, is said to have fallen from the sky. Another poor wretch of an outcast belonging here is noted in the *Scientific American*, 48-261: that, of an object, or a meteorite, that fell Feb. 16, 1883, near Brescia, Italy, a false report was circulated that one of the fragments bore the impress of a hand. That's all that is findable

by me upon this mere gasp of a thing. Intermediatistically, my acceptance is that, though in the course of human history, there have been some notable approximations, there never has been a real liar: that he could not survive in intermediateness, where everything merges away or has its pseudo-base in something else—would be instantly translated to the Negative Absolute. So my acceptance is that, though curtly dismissed, there was something to base upon in this report; that there were unusual markings upon this object. Of course that is not to jump to the conclusion that they were cuneiform characters that looked like fingerprints.

Altogether, I think that in some of our past expressions, we must have been very efficient, if the experience of Mr. Symons be typical, so indefinite are we becoming here. Just here we are interested in many things that have been found, especially in the United States, which speak of a civilization, or of many civilizations not in-digenous to this earth. One trouble is in trying to decide whether they fell here from the sky, or were left behind by visitors from other worlds. We have a notion that there have been disasters aloft, and that coins have dropped here: that inhabitants of this earth found them or saw them fall, and then made coins imitatively: it may be that coins were showered here by something of a tutelary nature that undertook to advance us from the stage of barter to the use of a medium. If coins should be identified as Roman coins, we've had so much experience with "identifications" that we know a phantom when we see one—but, even so, how could Roman coins have got to North America—far in the interior of North America—or buried under the accumulation of centuries of soil —unless they did drop from—wherever the first Romans came from? Ignatius Donnelly, in *Atlantis,* gives a list of objects that have been found in mounds that are supposed to antedate all European influence in America: lathe-made articles, such as traders —from somewhere—would supply to savages—marks of the lathe said to be unmistakable. Said to be: of course we can't accept that anything is unmistakable. In the *Rept. Smithson. Inst., I*881-619, there is an account, by Charles C. Jones, of two silver crosses that were found in Georgia. They are skillfully made, highly ornamented crosses, but are not conventional crucifixes: all arms of equal length. Mr. Jones is a good positivist—that De Sota had halted at the "precise" spot where these crosses were found. But the spirit of negativeness that lurks in all things said to be "precise" shows itself in that upon one of these crosses in an

inscription that has no meaning in Spanish or any other known, terrestrial language:

"IYNKICIDU," according to Mr. Jones. He thinks that this is a name, and that there is an aboriginal ring to it, though I should say, myself, that he was thinking of the far-distant Incas: that the Spanish donor cut on the cross the name of an Indian to whom it was presented. But we look at the inscription ourselves and see that the letters said to be "C" and "D" are turned the wrong way, and that the letter said to be "K" is not only turned the wrong way, but is upside down.

It is difficult to accept that the remarkable, the very extensive, copper mines in the region of Lake Superior were ever the works of American aborigines. Despite the astonishing extent of these mines, nothing has ever been found to indicate that the region was ever inhabited by permanent dwellers—". . . not a vestige of a dwelling, a skeleton, or a bone has been found." The Indians have no traditions relating to the mines. (*Amer. Antiquarian*, 25-258.) I think that we've had visitors: that they have come here for copper, for instance. As to other relics of them—but we now come upon frequency of a merger that has not so often appeared before :

Fraudulency.

Hair called real hair—then there are wigs. Teeth called real teeth—then there are false teeth. Official money—counterfeit money. It's the bane of psychic research. If there be psychic phenomena, there must be fraudulent psychic phenomena. So desperate is the situation here that Carrington argues that, even if Palladino be caught cheating, that is not to say that all her phenomena are fraudulent. My own version is: that nothing indicates anything, in a positive sense, because, in a positive sense, there is nothing to be indicated. Everything that is called true must merge away indistinguishably into something called false. Both are expressions of the same underlying quasiness, and are continuous. Fraudulent antiquarian relics are very common, but they are not more common than are fraudulent paintings.

W. S. Forest, *Historical Sketches of Norfolk, Virginia:*

That, in September, 1833, when some workmen, near Norfolk, were boring for water, a coin was drawn up from a depth of about 30 feet. It was about the size of an English shilling, but oval—an oval disk, if not a coin. The figures upon it were distinct, and represented "a warrior or hunter and other characters, apparently of Roman origin."

The means of exclusion would probably be—men digging a hole —no one else looking: one of them drops a coin into the hole—as to where he got a strange coin, remarkable in shape even—that's disregarded. Up comes the coin—expressions of astonishment from the evil one who had dropped it.

However, the antiquarians have missed this coin. I can find no other mention of it.

Another coin. Also a little study in the genesis of a prophet.

In the *American Antiquarian, I*6-313, is copied a story by a correspondent to the *Detroit News,* of a copper coin about the size of a two-cent piece, said to have been found in a Michigan mound. The Editor says merely that he does not endorse the find. Upon this slender basis, he buds out, in the next number of the *Antiquarian:*

"The coin turns out, as we predicted, to be a fraud."

You can imagine the scorn of Elijah, or any of the old more nearly real prophets.

Or all things are tried by the only kind of jurisprudence we have in quasi-existence:

Presumed to be innocent until convicted—but they're guilty.

The Editor's reasoning is as phantom-like as my own, or St. Paul's, or Darwin's. The coin is condemned because it came from the same region from which, a few years before, had come pottery that had been called fraudulent. The pottery had been condemned because it was condemnable.

Scientific American, June 17, 1882:

That a farmer, in Cass Co., Ill., had picked up, on his farm, a bronze coin, which was sent to Prof. F. F. Hilder, of St. Louis, who identified it as a coin of Antiochus IV. Inscription said to be in ancient Greek characters: translated as "King Antiochus Epiphanes (Illustrious) the Victorius." Sounds quite definite and convincing—but we have some more translations coming.

In the *American Pioneer,* 2-169, are shown two faces of a copper coin, with characters very much like those upon the Grave Creek stone—which, with translations, we'll take up soon. This coin is said to have been found in Connecticut, in 1843.

*Records of the Past, I*2-182:

That, early in 1913, a coin, said to be a Roman coin, was re-ported as discovered in an Illinois mound. It was sent to Dr. Emerson, of the Art Institute, of Chicago. His opinion was that the coin is "of the rare mintage

of Domitius Domitianus, Emperor in Egypt." As *to* its discovery in an Illinois mound, Dr. Emerson disclaims responsibility. But what strikes me here is that a joker should not have been satisfied with an ordinary Roman coin. Where did he get a rare coin, and why was it not missed from some collection? I have looked over numismatic journals enough to accept that the whereabouts of every rare coin in anyone's possession is known to coin-collectors. Seems to me nothing left but to call this another "identification."

*Proc. Amer. Phil. Soc., I*2-224:

That, in July, 1871, a letter was received from Mr. Jacob W. Moffit, of Chillicothe, Ill., enclosing a photograph of a coin, which he said had been brought up, by him, while boring, from a depth of 120 feet.

Of course, by conventional scientific standards, such depth has some extraordinary meaning. Paleontologists, geologists, and archaeologists consider themselves reasonable in arguing ancient origin of the far-buried. We only accept: depth is a pseudo-standard with us; one earthquake could bury a coin of recent mintage 120 feet below the surface.

According to a writer in the *Proceedings,* the coin is uniform in thickness, and had never been hammered out by savages—"there are other tokens of the machine shop."

But, according to Prof. Leslie, it is an astrologic amulet. "There are upon it the signs of Pisces and Leo."

Or, with due disregard, you can find signs of your great-grandmother, or of the Crusades, or of the Mayans, upon anything that ever came from Chillicothe or from a five and ten cent store. Anything that looks like a cat and a goldfish looks like Leo and Pisces: but, by due suppressions and distortions there's nothing that can't be made to look like a cat and a goldfish. I fear me we're turning a little irritable here. To be damned by slumbering giants and interesting little harlots and clowns who rank high in their profession is at least supportable to our vanity; but, we find that the anthropologists are of the slums of the divine, or of an archaic kindergarten of intellectuality, and it is very unflattering to find a mess of moldly infants sitting in judgment upon us.

Prof. Leslie then finds, as arbitrarily as one might find that some joker put the Brooklyn Bridge where it is, that "the piece was placed there as a practical joke, though not by its present owner; and is a modern fabrication, perhaps of the sixteenth century, possibly His-pano-American or French-American origin."

It's sheer, brutal attempt to assimilate a thing that may or may not have fallen from the sky, with phenomena admitted by the anthropologic system: or with the early French or Spanish explorers of Illinois. Though it is ridiculous in a positive sense to give reasons, it is more acceptable to attempt reasons more nearly real than opposing reasons. Of course, in his favor, we note that Prof. Leslie qualifies his notions. But his disregards are that there is nothing either French or Spanish about this coin. A legend upon it is said to be "somewhere between Arabic and Phoenician, without being either." Prof. Winchell (*Sparks from a Geologist's Hammer,* p. 170) says of the crude designs upon this coin, which was in his possession—scrawls of an animal and of a warrior, or of a cat and a gold-fish, whichever be convenient—that they had been neither stamped nor engraved, but "looked as if etched with an acid." That is a method unknown in numismatics of this earth. As to the crudity of design upon this coin, and something else—that, though the "warrior" may be, by due disregards, either a cat or a goldfish, we have to note that his headdress is typical of the American Indian—could be explained, of course, but for fear that we might be instantly translated to the Positive Absolute, which may not be absolutely desirable, we prefer to have some flaws or negativeness in our own expressions.

Data of more than the thrice-accursed:

Tablets of stone, with the ten commandments engraved upon them, in Hebrew, said to have been found in mounds in the United States;

Masonic emblems said to have been found in mounds in the United States.

We're upon the borderline of our acceptances, and we're amorphous in the uncertainties and mergings of our outline. Conventionally, or, with no real reason for so doing, we exclude these things, and then, as grossly and arbitrarily and irrationally—though our attempt is always to approximate away from these negative states—as ever a Kepler, Newton, or Darwin made his selections, without which he could not have seemed to be, at all, because every one of them is now seen to be an illusion, we accept that other lettered things have been found in mounds in the United States. Of course we do what we can to make the selection seem not gross and arbitrary and irrational. Then, if we accept that inscribed things of ancient origin have been found in the United States; that cannot be attributed to any race indigenous to the western hemisphere; that are not in any language ever heard of in the eastern hemisphere—there's nothing to it but to turn

non-Euclidian and try to conceive of a third “hemisphere,” or to accept that there has been intercourse between the western hemisphere and some other world.

But there is a peculiarity to these inscribed objects. They remind me of the records left, by Sir John Franklin, in the Arctic; but, also, of attempts made by relief expeditions to communicate with the Franklin expedition. The lost explorers cached their records—or concealed them conspicuously in mounds. The relief expeditions sent up balloons, from which messages were dropped broadcast. Our data are of things that have been cached, and of things that seem to have been dropped—

Or a Lost Expedition from—Somewhere.

Explorers from somewhere, and their inability to return—then, a long, sentimental, persistent attempt, in the spirit of our own Arctic relief-expeditions—at least to establish communication—

What if it may have succeeded?

We think of India—the millions of natives who are ruled by a small band of esoterics—only because they receive support and direction from—somewhere else—or from England.

In 1838, Mr. A. B. Tomlinson, owner of the great mound at Grave Creek, West Virginia, excavated the mound. He said that, in the presence of witnesses, he had found a small, flat, oval stone —or disk—upon which were engraved alphabetic characters.

Col. Whittelsey, an expert in these matters, says that the stone is now “universally regarded by archaeologists as a fraud”: that, in his opinion, Mr. Tomlinson had been imposed upon.

Avebury, *Prehistoric Times*, p. 271:

“I mention it because it has been the subject of much discussion, but it is now generally admitted to be a fraud. It is inscribed with Hebrew characters, but the forger has copied the modern instead of the ancient form of the letters.”

As I have said, we’re as irritable here, under the oppressions of the anthropologists as ever were slaves in the south toward superiorities from “poor white trash.” When we finally reverse our relative positions we shall give lowest place to the anthropologists. A Dr. Gray does at least look at a fish before he conceives of a miraculous origin for it. We shall have to submerge Lord Avebury far below him—if we accept that the stone from Grave Creek is generally regarded as a fraud by eminent authorities who

did not know it from some other object—or, in general, that so decided an opinion must be the product of either deliberate disregard or ignorance or fatigue. The stone belongs to a class of phenomena that is repulsive to the System. It will not assimilate with the System. Let such an object be heard of by such a systematist as Avebury, and the mere mention of it is as nearly certainly the stimulus to a conventional reaction as is a charged body to an electroscope or a glass of beer to a prohibitionist. It is of the ideals of Science to know one object from another before expressing an opinion upon a thing, but that is not the spirit of universal mechanics:

A thing. It is attractive or repulsive. Its conventional reaction follows.

Because it is not the stone from Grave Creek that is in Hebrew characters, either ancient or modern: it is a stone from Newark, Ohio, of which the story is told that a forger made this mistake of using modern instead of ancient Hebrew characters. We shall see that the inscription upon the Grave Creek stone is not in Hebrew.

Or all things are presumed to be innocent, but are supposed to be guilty —unless they assimilate.

Col. Whittelsey (*Western Reserve Historical Tracts, No. 33*) says that the Grave Creek stone was considered a fraud by Wilson, Squires, and Davis. Then he comes to the Congress of Archaeologists at Nancy, France, 1875. It is hard for Col. Whittelsey to admit that, at this meeting, which sounds important, the stone was endorsed. He reminds us of Mr. Symons, and "the man" who "considered" that he saw something. Col. Whittelsey's somewhat tortuous expression is that the finder of the stone "so imposed his views" upon the congress that it pronounced the stone genuine.

Also the stone was examined by Schoolcraft. He gave his opinion for genuineness.

Or there's only one process, and "see-saw" is one of its aspects. Three or four fat experts on the side against us. We find four or five plump ones on our side. Or all that we call logic and reasoning ends up as sheer preponderance of avoirdupois.

Then several philologists came out in favor of genuineness. Some of them translated the inscription. Of course, as we have said, it is our method —or the method of orthodoxy—way in which all conclusions are reached— to have some awfully eminent, or preponderantly plump, authorities with us whenever we can—in this case, however, we feel just a little apprehensive

in being caught in such excellently obese, but somewhat negativized, company:

Translation by M. Jombard:

"Thy orders are laws: thou shinest in impetuous elan and rapid chamois."

M. Maurice Schwab:

"The chief of Emigration who reached these places (or this island) has fixed these characters forever."

M. Oppert:

"The grave of one who was assassinated here. May God, to revenge him, strike his murderer, cutting off the hand of his existence."

I like the first one best. I have such a vivid impression from it of someone polishing up brass or something, and in an awful hurry. Of course the third is more dramatic—still they're all very good. They are perturbations of one another, I suppose.

In Tract 44, Col. Whittelsey returns to the subject. He gives the conclusion of Major De Helward, at the Congress of Luxembourg, 1877:

"If Prof. Read and myself are right in the conclusion that the figures are neither of the Runic, Phoenician, Canaanite, Hebrew, Lybian, Celtic, or any other alphabet-language, its importance has been greatly over-rated."

Obvious to a child; obvious to any mentality not helplessly subjected to a system:

That just therein lies the importance of this object.

It is said that an ideal of science is to find out the new—but, unless a thing be of the old, it is "unimportant."

"It is not worth while." (Hovey.)

Then the inscribed ax, or wedge, which, according to Dr. John C. Evans, in a communication to the American Ethnological Society, was plowed up, near Pemberton, N. J., 1859. The characters upon this ax, or wedge, are strikingly similar to the characters on the Grave Creek stone. Also, with a little disregard here and a little more there, they look like tracks in the snow by someone who's been out celebrating, or like your handwriting, or mine, when we think there's a certain distinction in illegibility. Method of disregard: anything's anything.

Dr. Abbott describes this object in the *Report of the Smithsonian Institution, I*875-260.

He says he has no faith in it.

All progress is from the outrageous to the commonplace. Or quasi-existence proceeds from rape to the crooning of lullabies. It's been interesting to me to go over various long-established periodicals and note controversies between attempting positivists and then intermediatistic issues. Bold, bad intruders of theories; ruffians with dishonorable intentions —the alarms of Science; her attempts to preserve that which *is* dearer than life itself—submission—then a fidelity like Mrs. Micawber's. So many of these ruffians, or wandering comedians that were hated, or scorned, pitied, embraced, conventionalized. There's not a notion in this book that has a more frightful, or ridiculous, mien than had the notion of human footprints in rocks, when that now respectabilized ruffian, or clown, was first heard from. It seems bewildering to one whose interests are not scientific that such rows should be raised over such trifles: but the feeling of a systematist toward such an intruder is just about what anyone's would be if a tramp from the street should come in, sit at one's dinner table, and say he belonged there. We know what hypnosis can do: let him insist with all his might that he does belong there, and one begins to suspect that he may be right; that he may have higher perceptions of what's right. The prohibitionists had this worked out very skillfully.

So the row that was raised over the stone from Grave Creek— but time and cumulativeness, and the very factor we make so much of—or the power of massed data. There were other reports of inscribed stones, and then, half a century later, some mounds—or caches, as we call them—were opened by the Rev. Mr. Gass, near the city of Davenport. *{American Antiquarian, I*5-73.) Several stone tablets were found. Upon one of them, the letters "TFTOWNS" may easily be made out. In this instance we hear nothing of fraudulency—time, cumulativeness, the power of massed data. The attempt to assimilate this datum is:

That the tablet was probably of Mormon origin.

Why?

Because, at Mendon, Ill., was found a brass plate, upon which were similar characters.

Why that?

Because that was found "near a house once occupied by a Mormon."

In a real existence, a real meteorologist, suspecting that cinders had come from a fire engine—would have asked a fireman.

Tablets of Davenport—there's not a record findable that it ever occurred to any antiquarian—to ask a Mormon.

Other tablets were found. Upon one of them are two "F's" and two "8's." Also a large tablet, twelve inches by eight to ten inches "with Roman numerals and Arabic." It is said that the figure "8" occurs three times, and the figure or letter "O" seven times. "With these familiar characters are others that resemble ancient alphabets, either Phoenecian or Hebrew."

It may be that the discovery of Australia, for instance, will turn out to be less important than the discovery and the meaning of these tablets—

But where will you read of them in anything subsequently published; what antiquarian has ever since tried to understand them, and their presence, and indications of antiquity, in a land that we're told was inhabited only by unlettered savages?

These things that are exhumed only to be buried in some other way.

Another tablet was found, at Davenport, by Mr. Charles Harrison, president of the American Antiquarian Society. "... 8 and other hieroglyphics are upon this tablet." This time, also, fraud is not mentioned. My own notion is that it is very unsportsmanlike ever to mention fraud. Accept anything. Then explain it your way. Anything that assimilates with one explanation, must have assimilable relations, to some degree, with all other explanations, if all explanations are somewhere continuous. Mormons are lugged in again, but the attempt is faint and helpless—"because general circumstances make it difficult to explain the presence of these tablets."

Altogether our phantom resistance is mere attribution to the Mormons, without the slightest attempt to find base for the attribution. We think of messages that were showered upon this earth, and of messages that were cached in mounds upon this earth. The similarity to the Franklin situation is striking. Conceivably centuries from now, objects dropped from relief-expedition-balloons may be found in the Arctic, and conceivably there are still undiscovered caches left by Franklin, in the hope that relief expeditions would find them. It would be as incongruous to attribute these things to the Eskimos as to attribute tablets and lettered stones to the aborigines of America. Some time I shall take up an expression that the queer-shaped mounds upon this earth were built by explorers from Somewhere, unable to get back, designed to attract attention from some other world, and that a vast sword-shaped mound has been discovered upon the moon— Just now we think of lettered things and their two possible significances.

A bizarre little lost soul, rescued from one of the morgues of the *American Journal of Science:*

An account, sent by a correspondent, to Prof. Silliman, of something that was found in a block of marble, taken November, 1829, from a quarry, near Philadelphia (*Am. J. Sci., 1*-19-361). The block was cut into slabs. By this process, it is said, was exposed an indentation in the stone, about one and a half inches by five-eighths of an inch. A geometric indentation: in it were two definite-looking raised letters, like "I U": only difference is that the corners of the "U" are not rounded, but are right angles. We are told that this block of stone came from a depth of seventy or eighty feet—or that, if acceptable, this lettering was done long, long ago. To some persons, not sated with the commonness of the incredible that has to be accepted, it may seem grotesque to think that an indentation in sand could have tons of other sand piled upon it and hardening into stone, without being pressed out—but the famous Nicaraguan footprints were found in a quarry under eleven strata of solid rock. There was no discussion of this datum. We only take it out for an airing.

As to lettered stones that may once upon a time have been showered upon Europe, if we cannot accept that the stones were inscribed by indigenous inhabitants of Europe, many have been found in caves—whence they were carried as curiosities by prehistoric men, or as ornaments, I suppose. About the size and shape of the Grave Creek stone, or disk: "flat and oval and about two inches wide." (Sollas.) Characters painted upon them: found first by M. Piette, in the cave of Mas d'Azil, Ariege. According to Sollas, they are marked in various directions with red and black lines. "But on not a few of them, more complex characters occur, which in a few instances simulate some of the capital letters of the Roman alphabet." In one instance the letters "F E I" accompanied by no other markings to modify them, are as plain as they could be. According to Sollas (*Ancient Hunters,* p. 95) M. Cartailhac has confirmed the observations of Piette, and M. Boule has found additional examples. "They offer one of the darkest problems of prehistoric times." (Sollas.)

As to caches in general, I should say that they are made with two purposes: to proclaim and to conceal; or that caches documents are hidden, or covered over, in conspicuous structures; at least, so are designed the cairns in the Arctic.

Trans. N. Y. *Acad, of Sciences,* 11-27:

That Mr. J. H. Hooper, Bradley Co., Tenn., having come upon a curious stone, in some woods upon his farm, investigated. He dug. He unearthed a long wall. Upon this wall were inscribed many alphabetic characters. “872 characters have been examined, many of them duplicates, and a few imitations of animal forms, the moon, and other objects. Accidental imitations of oriental alphabets are numerous.

The part that seems significant:

That these letters had been hidden under a layer of cement.

And still, in our own heterogeneity, or unwillingness, or inability, to concentrate upon single concepts, we shall—or we sha’n’t—accept that, though there may have been a Lost Colony or Lost Expedition from Somewhere, upon this earth, and extra-mundane visitors who could never get back, there have been other extra-mundane visitors, who have gone away again—altogether quite in analogy with the Franklin Expedition and Peary’s flittings in the Arctic—

And a wreck that occurred to one group of them—

And the loot that was lost overboard—

The Chinese seals of Ireland.

Not the things with the big, wistful eyes that lie on ice, and that are taught to balance objects on their noses—but inscribed stamps, with which to make impressions.

Proc. Roy. Irish Acad., 1-381:

A paper was read by Mr. J. Huband Smith, descriptive of about a dozen Chinese seals that had been found in Ireland. They are all alike: each a cube with an animal seated upon it. “It is said that the inscriptions upon them are of a very ancient class of Chinese characters.”

The three points that have made a leper and an outcast of this datum—but only in the sense of disregard, because nowhere that I know of is it questioned:

Agreement among archæologists that there were no relations, in the remote past, between China and Ireland;

That no other objects, from ancient China—virtually, I suppose —have ever been found in Ireland;

The great distances at which these seals have been found apart.

After Mr. Smith’s investigations—if he did investigate, or do more than record—many more Chinese seals were found in Ireland, and, with one exception, only in Ireland. In 1852, about 60 had been found. Of all

archæologic finds in Ireland, “none is enveloped in greater mystery.” (*Chambers’ Journal, I*6-364.) According to the writer in *Chambers Journal,* one of these seals was found in a curiosity shop in London. When questioned, the shopkeeper said that it had come from Ireland.

In this instance, if you don’t take instinctively to our expression, there is no orthodox explanation for your preference. It is the astonishing scattering of them, over field and forest, that has hushed the explainers. In the *Proceedings of the Royal Irish Academy,* 10-171, Dr. Frazer says that they “appear to have been sown broadcast over the country in some strange way that I cannot offer solution of.”

The struggle for expression of a notion that did not belong to Dr. Frazer’s era:

“The invariable story of their find is what we might expect if they had been accidentally dropped. . . .”

Three were found in Tipperary; six in Cork; three in Down; four in Waterford; all the rest—one or two to a county.

But one of these Chinese seals was found in the bed of the River Boyne, near Clonard, Meath, when workmen were raising gravel.

That one, at least, had been dropped there.

12

ASTRONOMY.

And a watchman looking at half a dozen lanterns, where where a street's been torn up.

There are gas lights and kerosene lamps and electric lights in the neighborhood: matches flaring, fires in stoves, bonfires, house afire somewhere; lights of automobiles, illuminated signs—

The watchman and his one little system.

Ethics.

And some young ladies and the dear old professor of a very "select" seminary.

Drugs and divorce and rape: venereal diseases, drunkenness, murder—

Excluded.

The prim and the precise, or the exact, the homogeneous, the single, the puritanic, the mathematic, the pure, the perfect. We can have illusion of this state—but only by disregarding its infinite denials. It's a drop of milk afloat in acid that's eating it. The positive swamped by the negative. So it is in intermediateness, where only to "be" positive is to generate corresponding and, perhaps, equal negativeness. In our acceptance, it is, in quasi-existence, premonitory, or pre-natal, or pre-awakening consciousness of a real existence.

But this consciousness of realness is the greatest resistance to efforts to realize or to become real—because it is feeling that realness has been attained. Our antagonism is not to Science, but to the attitude of the sciences that they have finally realized; or to belief, instead of acceptance; to the insufficiency, which, as we have seen over and over, amounts to paltriness and puerility of scientific dogmas and standards. Or, if several persons start out to Chicago, and get to Buffalo, and one be under the delusion that Buffalo is Chicago, that one will be a resistance to the progress of the others.

So astronomy and its seemingly exact, little system—

But data we shall have of round worlds and spindle-shaped worlds, and worlds shaped like a wheel; worlds like titanic pruning hooks; worlds linked together by streaming filaments; solitary worlds, and worlds in hordes: tremendous worlds and tiny worlds: some of them made of material like the material of this earth; and worlds that are geometric super-constructions made of iron and steel—

Or not only fall from the sky of ashes and cinders and coke and charcoal and oily substances that suggest fuel—but the masses of iron that have fallen upon this earth.

Wrecks and flotsam and fragments of vast iron constructions—

Or steel. Sooner or later we shall have to take up an expression that fragments of steel have fallen from the sky. If fragments not of iron, but of steel have fallen upon this earth—

But what would a deep-sea fish learn even if a steel plate of a wrecked vessel above him should drop and bump him on the nose?

Our submergence in a sea of conventionality of almost impenetrable density.

Sometimes I'm a savage who has found something on the beach of his island. Sometimes I'm a deep-sea fish with a sore nose.

The greatest of mysteries:

Why don't they ever come here, or send here, openly?

Of course there's nothing to that mystery if we don't take so seriously the notion—that we must be interesting. It's probably for moral reasons that they stay away—but even so, there must be some degraded ones among them.

Or physical reasons:

When we can specially take up that subject, one of our leading ideas, or credulities, will be that near approach by another world to this world would be catastrophic: that navigable worlds would avoid proximity; that others that have survived have organized into protective remotenesses, or orbits which approximate to regularity, though by no means to the degree of popular supposition.

But the persistence of the notion that we must be interesting. Bugs and germs and things like that: they're interesting to us: some of them are too interesting.

Dangers of near approach—nevertheless our own ships that dare not venture close to a rocky shore can send rowboats ashore—

Why not diplomatic relations established between the United States and Cyclorea—which, in our advanced astronomy, is the name of a remarkable wheel-shaped world or super-construction? Why not missionaries sent here openly to convert us from our barbarous prohibitions and other taboos, and to prepare the way for a good trade in ultra-bibles and super-whiskeys; fortunes made in selling us cast-off super-fineries, which we'd take to like an African chief to someone's old silk hat from New York or London?

The answer that occurs to me is so simple that it seems immediately acceptable, if we accept that the obvious is the solution of all problems, or if most of our perplexities consist in laboriously and painfully conceiving of the unanswerable, and then looking for answers—using such words as "obvious" and "solution" conventionally—

Or:

Would we, if we could, educate and sophisticate pigs, geese, cattle?

Would it be wise to establish diplomatic relation with the hen that now functions, satisfied with mere sense of achievement by way of compensation?

I think we're property.

I should say we belong to something:

That once upon a time, this earth was No-man's Land, that other worlds explored and colonized here, and fought among themselves for possession, but that now it's owned by something:

That something owns this earth—all others warned off.

Nothing in our own times—perhaps—because I am thinking of certain notes I have—has ever appeared upon this earth, from somewhere else, so openly as Columbus landed upon San Salvador, or as Hudson sailed up his river. But as to surreptitious visits to this earth, in recent times, or as to emissaries, perhaps, from other worlds, or voyagers who have shown every indication of intent to evade and avoid, we shall have data as convincing as our data of oil or coal-burning aerial super-constructions.

But, in this vast subject, I shall have to do considerable neglecting or disregarding, myself. I don't see how I can, in this book, take up at all the subject of possible use of humanity to some other mode of existence, or the flattering notion that we can possibly be worth something.

Pigs, geese, and cattle.

First find out that they are owned.

Then find out the whyness of it.

I suspect that, after all, we're useful—that among contesting claimants, adjustment has occurred, or that something now has a legal right to us, by force, or by having paid out analogues of beads for us to former, more primitive, owners of us—all others warned off—that all this has been known, perhaps for ages, to certain ones upon this earth, a cult or order, members of which function like bellwethers to the rest of us, or as superior slaves or overseers, directing us in accordance with instructions received—from Somewhere else—in our mysterious usefulness.

But I accept that, in the past, before proprietorship was established, inhabitants of a host of other worlds have—dropped here, hopped here, wafted, sailed, flown, motored—walked here, for all I know—been pulled here, been pushed; have come singly, have come in enormous numbers; have visited occasionally, have visited periodically for hunting, trading, replenishing harems, mining: have been unable to stay here, have established colonies here, have been lost here; far-advanced peoples, or things, and primitive peoples or whatever they were: white ones, black ones, yellow ones—

I have a very convincing datum that the ancient Britons were blue ones.

Of course we are told by conventional anthropologists that they only painted themselves blue, but in our own advanced anthropology, they were veritable blue ones—

Annals of Philosophy, 14-51:

Note of a blue child born in England.

That's atavism.

Giants and fairies. We accept them, of course. Or, if we pride ourselves upon being awfully far-advanced, I don't know how to sustain our conceit except by very largely going far back. Science of today—the superstition of tomorrow. Science of tomorrow—the superstition of today.

Notice of a stone ax, 17 inches long: 9 inches across broad end. (*Proc. Soc. of Ants. of Scotland*, 1-9-184.)

Amer. Antiquarian, 18-60:

Copper ax from an Ohio mound: 22 inches long; weight 38 pounds.

Atner. Anthropologist, n.s., 8-229:

Stone ax found at Birchwood, Wisconsin—exhibited in the collection of the Missouri Historical Society—found with "the pointed end embedded in the soil"—for all I know, may have dropped there —28 inches long, 14 wide, 11 thick—weight 300 pounds.

Or the footprints, in sandstone, near Carson, Nevada—each print 18 to 20 inches long. (*Amer. Jour. Sci.*, 3-26-139.)

These footprints are very clear and well-defined: reproduction of them in the *Journal*—but they assimilate with the System, like sour apples to other systems: so Prof. Marsh, a loyal and unscrupulous systematist, argues:

"The size of these footprints and specially the width between the right and left series, are strong evidence that they were not made by men, as has been so generally supposed."

So these excluders. Stranglers of Minerva. Desperadoes of disregard. Above all, or below all, the anthropologists. I'm inspired with a new insult —someone offends me: I wish to express almost absolute contempt for him —he's a systematistic anthropologist. Simply to read something of this kind is not so impressive as to see for one's self: if anyone will take the trouble to look up these footprints, as pictured in the *Journal*, he will either agree with Prof. Marsh or feel that to deny them is to indicate a mind as profoundly enslaved by a system as was ever the humble intellect of a medieval monk. The reasoning of this representative phantom of the chosen, or of the spectral appearances who sit in judgment, or condemnation, upon us of the more nearly real:

That there never were giants upon this earth, because gigantic footprints are more gigantic than prints made by men who are not giants.

We think of giants as occasional visitors to this earth. Of course —Stonehenge, for instance. It may be that, as time goes on, we shall have to admit that there are remains of many tremendous habitations of giants upon this earth, and that their appearances here were more than casual—but their bones—or the absence of their bones—

Except—that, no matter how cheerful and unsuspicious my disposition may be, when I go to the American Museum of Natural History, dark cynicisms arise the moment I come to the fossils—or old bones that have been found upon this earth—gigantic things— that have been reconstructed into terrifying but "proper" dinosaurs —but my uncheerfulness—

The dodo did it.

On one of the floors below the fossils, they have a reconstructed dodo. It's frankly a fiction: it's labeled as such—but it's been reconstructed so cleverly and so convincingly—

Fairies.

"Fairy crosses."

Harper's Weekly, 50-715:

That, near the point where the Blue Ridge and the Allegheny Mountains unite, north of Patrick County, Virginia, many little stone crosses have been found.

A race of tiny beings.

They crucified cockroaches.

Exquisite beings—but the cruelty of the exquisite. In their diminutive way they were human beings. They crucified.

The "fairy crosses," we are told in *Harper' s Weekly*, range in weight from one-quarter of an ounce to an ounce: but it is said, in the *Scientific American*, 79-395, that some of them are no larger than the head of a pin.

They have been found in two other states, but all in Virginia are strictly localized on and along Bull Mountain.

We are reminded of the Chinese seals in Ireland.

I suppose they fell there.

Some are Roman crosses, some St. Andrew's, some Maltese. This time we are spared contact with the anthropologists and have geologists instead, but I am afraid that the relief to our finer, or more nearly real, sensibilities will not be very great. The geologists were called upon to explain the "fairy crosses." Their response was the usual scientific tropism—"Geologists say that they are crystals." The writer in *Harper' s Weekly* points out that this "hold up," or this anaesthetic, if theoretic science be little but attempt to assuage pangs of the unexplained, fails to account for the localized distributions of these objects—which make me think of both aggregation and separation at the bottom of the sea, if from a wrecked ship, similar objects should fall in large numbers but at different times.

But some are Roman crosses, some St. Andrew's, some Maltese.

Conceivably there might be a mineral that would have a diversity of geometric forms, at the same time restricted to some expression of the cross, because snowflakes, for instance, have diversity but restriction to the hexagon, but the guilty geologists, cold-blooded as astronomers and chemists and all the other deep-sea fishes—though less profoundly of the pseudo-saved than the wretched anthropologists—disregarded the very datum—that it was wise to disregard:

That the "fairy crosses" are not all made of the same material.

It's the same old disregard, or it's the same old psycho-tropism, or process of assimilation. Crystals are geometric forms. Crystals are included

in the System. So then “fairy crosses” are crystals. But that different minerals should, in a few different regions, be inspired to turn into different forms of the cross—is the kind of resistance that we call less nearly real than our own acceptances.

We now come to some “cursed” little things that are of the “lost,” but for the “salvation” of which scientific missionaries have done their damnedest.

“Pigmy flints.”

They can’t very well be denied.

They’re lost and well known.

“Pigmy flints” are tiny, prehistoric implements. Some of them are a quarter of an inch in size. England, India, France, South Africa— they’ve been found in many parts of the world—whether showered there or not. They belong high up in the froth of the accursed: they are not denied, and they have not been disregarded; there is an abundant literature upon this subject. One attempt to rationalize them, or assimilate them, or take them into the scientific fold, has been the notion that they were toys of prehistoric children. It sounds reasonable. But, of course, by the reasonable we mean that for which the equally reasonable, but opposing, has not been found out —except that we modify that by saying that, though nothing’s finally reasonable, some phenomena have higher approximations to Reasonableness than have others. Against the notion of toys, the higher approximation is that where “pygmy flints” are found, all flints are pygmies —at least so in India, where, when larger implements have been found in the same place, there are separations by strata. (Wilson.)

The datum that, just at present, leads me to accept that these flints were made by beings about the size of pickles, is a point brought out by Prof. Wilson (*Rept. National Museum,* 1892-455):

Not only that the flints are tiny but that the chipping upon them is “minute.”

Struggle for expression, in the mind of a 19th-century-ite, of an idea that did not belong to his era:

In *Science Gossip*, *I*896-36, R. A. Galty says:

“So fine is the chipping that to see the workmanship a magnifying glass is necessary.”

I think that would be absolutely convincing, if there were anything—absolutely anything—either that tiny beings, from pickle to cucumber-

stature, made these things, or that ordinary savages made them under magnifying glasses.

The idea that we are now going to develop, or perpetrate, is rather intensely of the accursed, or the advanced. It's a lost soul, I admit— or boast—but it fits in. Or, as conventional as ever, our own method is the scientific method of assimilating. It assimilates, if we think of the inhabitants of Elvera—

By the way, I forgot to tell the name of the giant's world:

Monstrator.

Spindle-shaped world—about 100,000 miles along its major axis— more details to be published later.

But our coming inspiration fits in, if we think of the inhabitants of Elvera as having only visited here: having, in hordes as dense as clouds of bats, come here, upon hunting excursions—for mice, I should say: for bees, very likely—or most likely of all, or inevitably, to convert the heathen here—horrified with anyone who would gorge himself with more than a bean at a time; fearful for the souls of beings who would guzzle more than a dewdrop at a time— hordes of tiny missionaries, determined that right should prevail, determining right by their own minutenesses.

They must have been missionaries.

Only to be is motion to convert or assimilate something else.

The idea now is that tiny creatures coming here from their own little world, which may be Eros, though I call it Elvera, would flit from the exquisite to the enormous—gulp of a fair-sized terrestrial animal—half a dozen of them gone and soon digested. One falls into a brook—torn away in a mighty torrent—

Or never anything but conventional, we adopt from Darwin:

"The geological records are incomplete."

Their flints would survive, but, as to their fragile bodies—one might as well search for prehistoric frost-traceries. A little whirl-wind—Elverean carried away a hundred yards—body never found by his companions. They'd mourn for the departed. Conventional emotion to have: they'd mourn. There'd have to be a funeral: there's no getting away from funerals. So I adopt an explanation that I take from the anthropologists: burial in effigy. Perhaps the Elvereans would not come to this earth again until many years later—another distressing occurrence—one little mausoleum for all burials in effigy.

London *Times*, July 20, 1836:

That, early in July, 1836, some boys were searching for rabbits' burrows in the rocky formation, near Edinburgh, known as Arthur's Seat. In the side of a cliff, they came upon some thin sheets of slate, which they pulled out.

Little cave.

Seventeen tiny coffins.

Three or four inches long.

In the coffins were miniature wooden figures. They were dressed differently both in style and material. There were two tiers of eight coffins each, and a third tier begun, with one coffin.

The extraordinary datum, which has especially made mystery here:

That the coffins had been deposited singly, in the little cave, and at intervals of many years. In the first tier, the coffins were quite decayed, and the wrappings had moldered away. In the second tier, the effects of age had not advanced so far. And the top coffin was quite recent-looking.

In the *Proceedings of the Society of Antiquarians of Scotland*, 3-12-460, there is a full account of this find. Three of the coffins and three of the figures are pictured.

So Elvera with its downy forests and its microscopic oyster shells —and if the Elvereans be not very far-advanced, they take baths— with sponges the size of pin heads—

Or that catastrophes have occurred: that fragments of Elvera have fallen to this earth:

In *Popular Science,* 20-83, Francis Bingham, writing of the corals and sponges and shells and crinoids that Dr. Hahn had asserted that he had found in meteorites, says, judging by the photographs of them, that their "notable peculiarity" is their "extreme smallness." The corals, for instance, are about one-twentieth the size of terres trial corals. "They represent a veritable pygmy animal world," says Bingham.

The inhabitants of Monstrator and Elvera were primitives, I think, at the time of their occasional visits to this earth—though, of course, in a quasi-existence, anything that we semi-phantoms call evidence of anything may be just as good evidence of anything else. Logicians and detectives and jurymen and suspicious wives and members of the Royal Astronomic Society recognize this indeterminateness, but have the delusion that in the method of agreement there is final, or real evidence. The method is good enough for an "existence" that is only semi-real, but also it is the method of

reasoning by which witches were burned, and by which ghosts have been feared. I'd not like to be so unadvanced as to deny witches and ghosts, but I do think that there never have been witches and ghosts like those of popular supposition. But stories of them have been supported by astonishing fabrications of details and of different accounts in agreement.

So, if a giant left impressions of his bare feet in the ground, that is not to say that he was a primitive—bulk of culture out taking the Kneipp cure. So, if Stonehenge is a large, but only roughly geometric construction, the inattention to details by its builders— signifies anything you please—ambitious dwarfs or giants—if giants, that they were little more than cave men, or that they were post-impressionist architects from a very far-advanced civilization.

If there are other worlds, there are tutelary worlds—or that Kepler, for instance, could not have been absolutely wrong: that his notion of an angel assigned to push along and guide each planet may not be very acceptable, but that, abstractedly, or in the notion of a tutelary relation, we may find acceptance.

Only to be is to be tutelary.

Our general expression:

That "everything" in Intermediateness is not a thing, but is an endeavor to become something—by breaking away from its continuity, or merging away, with all other phenomena—is an attempt to break away from the very essence of a relative existence and become absolute—if it have not surrendered to, or become part of, some higher attempt:

That to this process there are two aspects:

Attraction, or the spirit of everything to assimilate all other things —if it have not given in and subordinated to—or have not been assimilated by—some higher attempted system, unity, organization, entity, harmony, equilibrium—

And repulsion, or the attempt of everything to exclude or disregard the unassimilable.

Universality of the process:

Anything conceivable:

A tree. It is doing all it can to assimilate substances of the soil and substances of the air, and sunshine, too, into tree-substance: obversely it is rejecting or excluding or disregarding that which it cannot assimilate.

Cow grazing, pig rooting, tiger stalking: planets trying, or acting, to capture comets; rag pickers and the Christian religion, and a cat down headfirst in a garbage can; nations fighting for more territory, sciences correlating the data they can, trust magnates organizing, chorus girl out for a little late supper—all of them stopped somewhere by the unassimilable. Chorus girl and the broiled lobster. If she eats not shell and all she represents universal failure to positivize. Also, if she does she represents universal failure to positivize: her ensuing disorders will translate her to the Negative Absolute.

Or Science and some of our cursed hard-shelled data.

One speaks of the tutelarian as if it were something distinct in itself. So one speaks of a tree, a saint, a barrel of pork, the Rocky Mountains. One speaks of missionaries, as if they were positively different, or had identity of their own, or were a species by themselves. To the Intermediatist, everything that seems to have identity is only attempted identity, and every species is continuous with all other species, or that which is called the specific is only emphasis upon some aspect of the general. If there are cats, they're only emphasis upon universal felinity. There is nothing that does not partake of that of which the missionary, or the tutelary, is the special. Every conversation is a conflict of missionaries, each trying to convert the other, to assimilate, or to make the other similar to himself. If no progress be made, mutual repulsion will follow.

If other worlds have ever in the past had relations with this earth, they were attempted positivizations: to extend themselves, by colonies, upon this earth; to convert, or assimilate, indigenous inhabitants of this earth.

Or parent-worlds and their colonies here—

Super-Romanimus—

Or where the first Romans came from.

It's as good as the Romulus and Remus story.

Super-Israelimus—

Or that, despite modern reasoning upon this subject, there was once something that was super-parental or tutelary to early orientals.

Azuria, which was tutelary to the early Britons:

Azuria, whence came the blue Britons, whose descendants gradually diluting, like blueing in a wash-tub, where a faucet's turned on, have been most emphasized of sub-tutelarians, or assimilators ever since.

Worlds that were once tutelarian worlds—before this earth became sole property of one of them—their attempts to convert or assimilate—but then the state that comes to all things in their missionary-frustrations—unacceptance by all stomachs of some things; rejection by all societies of some units; glaciers that sort over and cast out stones—

Repulsion. Wrath of the baffled missionary. There is no other wrath. All repulsion is reaction to the unassimilable.

So then the wrath of Azuria—

Because surrounding peoples of this earth would not assimilate with her own colonists in the part of the earth that we now call England.

I don't know that there has ever been more nearly just, reasonable, or logical wrath, in this earth's history—if there is no other wrath.

The wrath of Azuria, because the other peoples of this earth would not turn blue to suit her.

History is a department of human delusion that interests us. We are able to give a little advancement to history. In the vitrified forts of a few parts of Europe, we find data that the Humes and Gibbons have disregarded.

The vitrified forts surrounding England, but not in England.

The vitrified forts of Scotland, Ireland, Brittany, and Bohemia.

Or that, once upon a time, with electric blasts, Azuria tried to swipe this earth clear of the peoples who resisted her.

The vast blue bulk of Azuria appeared in the sky. Clouds turned green. The sun was formless and purple in the vibrations of wrath that were emanating from Azuria. The whitish, or yellowish, or brownish peoples of Scotland, Ireland, Brittany, and Bohemia fled to hilltops and built forts. In a real existence, hilltops, or easiest accessibility to an aerial enemy, would be the last choice in refuges. But here, in quasi-existence, if we're accustomed to run to hilltops, in times of danger, we run to them just the same, even with danger closest to hilltops. Very common in quasi-existence: attempt to escape by running closer to the pursuing.

They built forts, or already had forts, on hilltops.

Something poured electricity upon them.

The stones of these forts exist to this day, vitrified, or melted and turned to glass.

The archaeologists have jumped from one conclusion to another, like the "rapid chamois" we read of a while ago, to account for vitrified forts, always restricted by the commandment that unless their conclusions

conformed to such tenets as Exclusionism, of the System, they would be excommunicated. So archaeologists, in their medieval dread of excommunication, have tried to explain vitrified forts in terms of terrestrial experience. We find in their insufficiencies the same old assimilating of all that could be assimilated, and disregard for the unassimilable, conventionalizing into the explanation that vitrified forts were made by prehistoric peoples who built vast fires—often remote from wood-supply—to melt externally, and to cement together, the stones of their constructions. But negativeness always: so within itself a science can never be homogeneous or unified or harmonious. So Miss Russel, in the *Journal of the B. A. A.*, has pointed out that it is seldom that single stones, to say nothing of long walls, of large houses that are burned to the ground, are vitrified.

If we pay a little attention to this subject, ourselves, before starting to write upon it, which is one of the ways of being more nearly real than oppositions so far encountered by us, we find:

That the stones of these forts are vitrified in no reference to cementing them: that they are cemented here and there, in streaks, as if special blasts had struck, or played, upon them.

Then one thinks of lightning?

Once upon a time something melted, in streaks, the stones of forts on the tops of hills in Scotland, Ireland, Brittany, and Bohemia.

Lightning selects the isolated and conspicuous.

But some of the vitrified forts are not upon tops of hills: some are very inconspicuous: their walls too are vitrified in streaks.

Something once had effect, similar to lightning, upon forts, mostly on hills, in Scotland, Ireland, Brittany, and Bohemia.

But upon hills, all over the rest of the world, are remains of forts that are not vitrified.

There is only one crime, in the local sense, and that is not to turn blue, if the gods are blue: but, in the universal sense, the one crime is not to turn the gods themselves green, if you’re green.

13

ONE of the most extraordinary of phenomena, or alleged phenomena, of psychic research, or alleged research—if in quasi-existence there never has been real research, but only approximations to research that merge away, or that are continuous with, prejudice and convenience—

"Stone-throwing."

It's attributed to poltergeists. They're mischievous spirits.

Poltergeists do not assimilate with our own present quasi-system, which is an attempt to correlate denied or disregarded data as phenomena of extra-telluric forces, expressed in physical terms. Therefore I regard poltergeists as evil or false or discordant or absurd— names that we give to various degrees or aspects of the unassimilable, or that which resists attempts to organize, harmonize, systematize, or, in short, to positivize—names that we give to our recognitions of the negative state. I don't care to deny poltergeists, because I suspect that later, when we're more enlightened, or when we widen the range of our credulities, or take on more of that increase of ignorance that is called knowledge, poltergeists may become assimilable. Then they'll be as reasonable as trees. By reasonableness I mean that which assimilates with a dominant force, or system, or a major body of thought—which is, itself, of course, hypnosis and delusion—developing, however, in our acceptance, to higher and higher approximations to realness. The poltergeists are now evil or absurd to me, proportionately to their present unassimilableness, compounded, however, with the factor of their possible future assimilableness.

We lug in the poltergeists, because some of our own data, or alleged data, merge away indistinguishably with data, or alleged data, of them:

Instances of stones that have been thrown, or that have fallen, upon a small area, from an unseen and undetectable source.

London *Times*, April 27, 1872:

"From 4 o'clock, Thursday afternoon, until half past eleven, Thursday night, the houses, 56 and 58 Reverdy Road, Bermondsey, were assailed with stones and other missiles coming from an unseen quarter. Two children

were injured, every window broken, and several articles of furniture were destroyed. Although there was a strong body of policemen scattered in the neighborhood, they could not trace the direction whence the stones were thrown."

"Other missiles" make a complication here. But if the expression means tin cans and old shoes, and if we accept that the direction could not be traced because it never occurred to anyone to look upward—why, we've lost a good deal of our provincialism by this time.

London *Times*, Sept. 16, 1841:

That, in the home of Mrs. Charton, at Sutton Courthouse, Sutton Lane, Chiswick, windows had been broken "by some unseen agent." Every attempt to detect the perpetrator failed. The mansion was detached and surrounded by high walls. No other building was near it.

The police were called. Two constables, assisted by members of the household, guarded the house, but the windows continued to be broken "both in front and behind the house."

Or the floating islands that are often stationary in the Super-Sargasso Sea; and atmospheric disturbances that sometimes affect them, and bring things down within small areas, upon this earth, from temporarily stationary sources.

Super-Sargasso Sea and the beaches of its floating islands from which I think, or at least accept, pebbles have fallen:

Wolverhampton, England, June, 1860—violent storm—fall of so many little black pebbles that they were cleared away by shoveling (*La Sci. Pour Tous*, 5-264); great number of small black stones that fell at Birmingham, England, August, 1858—violent storm—said to be similar to some basalt a few leagues from Birmingham (*Rept. Brit. Assoc*, 1864-37); pebbles described as "common water-worn pebbles" that fell at Palestine, Texas, July 6, 1888—"of a formation not found near Palestine" (W. H. Perry, Sergeant, Signal Corps, *Monthly Weather Review*, July, 1888); round, smooth pebbles at Kandahor, 1834 (*Am. J. Sci.*, 1-26-161); "a number of stones of peculiar formation and shapes, unknown in this neighborhood, fell in a tornado at Hillsboro, Ill., May 18, 1883." (*Monthly Weather Review*, May, 1883.)

Pebbles from aerial beaches and terrestrial pebbles as products of whirlwinds, so merge in these instances that, though it's interesting to hear of things of peculiar shape that have fallen from the sky, it seems best to

pay little attention here, and to find phenomena of the Super-Sargasso Sea remote from the merger:

To this requirement we have three adaptations:

Pebbles that fell where no whirlwind to which to attribute them could be learned of;

Pebbles which fell in hail so large that incredibly could that hail have been formed in this earth's atmosphere;

Pebbles which fell and were, long afterward, followed by more pebbles, as if from some aerial, stationary source, in the same place. In September, 1898, there was a story in a New York newspaper, of lightning—or an appearance of luminosity?—in Jamaica—something had struck a tree: near the tree were found some small pebbles. It was said that the pebbles had fallen from the sky, with the lightning. But the insult to orthodoxy was that they were not angular fragments such as might have been broken from a stony meteorite: that they were "water-worn pebbles."

In the geographical vagueness of a mainland, the explanation "up from one place and down in another" is always good, and is never overworked, until the instances are massed as they are in this book: but, upon this occasion, in the relatively small area of Jamaica, there was no whirlwind findable—however "there in the first place" bobs up.

Monthly Weather Review, August, 1898-363:

That the government meteorologist had investigated: had reported that a tree had been struck by lightning, and that small water-worn pebbles had been found near the tree: but that similar pebbles could be found all over Jamaica.

Monthly Weather Review, September, 1915-446:

Prof. Fassig gives an account of a fall of hail that occurred in Maryland, June 22, 1915: hailstones the size of baseballs "not at all uncommon."

"An interesting, but unconfirmed, account stated that small pebbles were found at the center of some of the larger hail gathered at Annapolis. The young man who related the story offered to produce the pebbles, but has not done so."

A footnote :

"Since writing this, the author states that he has received some of the pebbles."

When a young man "produces" pebbles, that's as convincing as anything else I've ever heard of, though no more convincing than, if having told of

ham sandwiches falling from the sky, he should "produce" ham sandwiches. If this "reluctance" be admitted by us, we correlate it with a datum reported by a Weather Bureau observer, signifying that, whether the pebbles had been somewhere aloft a long time or not, some of the hailstones that fell with them, had been. The datum is that some of these hailstones were composed of from twenty to twenty-five layers alternately of clear ice and snow-ice. In orthodox terms I argue that a fair-sized hailstone falls from the clouds with velocity sufficient to warm it so that it would not take on even one layer of ice. To put on twenty layers of ice, I conceive of something that had not fallen at all, but had rolled somewhere, at a leisurely rate, for a long time.

We now have a commonplace datum that is familiar in two respects:

Little, symmetric objects of metal that fell at Orenburg, Russia, September, 1824 (*Phil. Mag.*, 4-8-463).

A second fall of these objects, at Orenburg, Russia, Jan. 25, 1825 (*Quar. Jour. Roy. Inst., 1*828-1-447).

I now think of the disk of Tarbes, but when first I came upon these data I was impressed only with recurrence, because the objects of Orenburg were described as crystals of pyrites, or sulphate of iron. I had no notion of metallic objects that might have been shaped or molded by means other than crystallization, until I came to Arago's account of these occurrences (*CEuvres*, *11*-644). Here the analysis gives 70 per cent, red oxide of iron, and sulphur and loss by ignition 5 per cent. It seems to me acceptable that iron with considerably less than 5 per cent, sulphur in it is not iron pyrites—then little, rusty iron objects, shaped by some other means, have fallen, four months apart, at the same place. M. Arago expresses astonishment at this phenomenon of recurrence so familiar to us.

Altogether, I find opening before us, vistas of heresies to which I, for one, must shut my eyes. I have always been in sympathy with the dogmatists and exclusionists: that is plain in our opening lines: that to seem to be is falsely and arbitrarily and dogmatically to exclude. It is only that exclusionists who are good in the nineteenth century are evil in the twentieth century. Constantly we feel a merging away into infinitude; but that this book shall approximate to form, or that our data shall approximate to organization, or that we shall approximate to intelligibility, we have to call ourselves back constantly from wandering off into infinitude. The thing

that we do, however, is to make our own outline, or the difference between what we include and what we exclude, vague.

The crux here, and the limit beyond which we may not go—very much—is:

Acceptance that there is a region that we call the Super-Sargasso Sea—not yet fully accepted, but a provisional position that has received a great deal of support—

But is it a part of this earth, and does it revolve with and over this earth—

Or does it flatly overlie this earth, not revolving with and over this earth—

That this earth does not revolve, and is not round, or roundish, at all, but is continuous with the rest of its system, so that, if one could break away from the traditions of the geographers, one might walk and walk, and come to Mars, and then find Mars continuous with Jupiter?

I suppose some day such queries will sound absurd—the thing will be so obvious—

Because it is very difficult for me to conceive of little metallic objects hanging precisely over a small town in Russia, for four months, if revolving, unattached, with a revolving earth—

It may be that something aimed at that town, and then later took another shot.

These are speculations that seem to me to be evil relatively to these early years in the twentieth century—

Just now, I accept that this earth is—not round, of course: that is very old-fashioned—but roundish, or, at least, that it has what is called form of its own, and does revolve upon its axis, and in an orbit around the sun. I only accept these old traditional notions—

And that above it are regions of suspension that revolve with it: from which objects fall, by disturbances of various kinds, and then, later, fall again, in the same place:

Monthly Weather Review, May, 1884-134:

Report from the Signal Service observer, at Bismarck, Dakota:

That, at 9 o'clock, in the evening of May 22, 1884, sharp sounds were heard throughout the city, caused by a fall of flinty stones striking against windows.

Fifteen hours later another fall of flinty stones occurred at Bismarck.

There is no report of stones having fallen anywhere else.

This is a thing of the ultra-damned. All Editors of scientific publications read the *Monthly Weather Review* and frequently copy from it. The noise made by the stones of Bismarck, rattling against those windows, may be in a language that aviators will some day interpret: but it was a noise entirely surrounded by silences. Of this ultra-damned thing, there is no mention, findable by me, in any other publication.

The size of some hailstones has worried many meteorologists— but not text-book meteorologists. I know of no more serene occupation than that of writing text-books—though writing for the *War Cry,* of the Salvation Army, may be equally unadventurous. In the drowsy tranquillity of a text-book, we easily and unintelligently read of dust particles around which icy rain forms, hailstones, in their fall, then increasing by accretion—but in the meteorological journals, we read often of air-spaces nucleating hailstones—

But it's the size of the things. Dip a marble in icy water. Dip and dip and dip it. If you're a resolute dipper, you will, after a while, have an object the size of a baseball—but I think a thing could fall from the moon in that length of time. Also the strata of them. The Maryland hailstones are unusual, but a dozen strata have often been counted. Ferrel gives an instance of thirteen strata. Such considerations led Prof. Schwedoff to argue that some hailstones are not, and cannot, be generated in this earth's atmosphere—that they come from somewhere else. Now, in a relative existence, nothing can of itself be either attractive or repulsive: its effects are functions of its associations or implications. Many of our data have been taken from very conservative scientific sources: it was not until their discordant implications, or irreconcilabilities with the System, were perceived, that excommunication was pronounced against them.

Prof. SchwedofPs paper was read before the British Association (*Rept. of 1*882, p. 453).

The implication, and the repulsiveness of the implication to the snug and tight little exclusionists of 1882—though we hold out that they were functioning well and ably relatively to 1882—

That there is water—oceans or lakes and ponds, or rivers of it— that there is water away from, and yet not far-remote from, this earth's atmosphere and gravitation—

The pain of it:

That the snug little system of 1882 would be ousted from its re-posefulness—

A whole new science to learn:

The Science of Super-Geography—

And Science is a turtle that says that its own shell encloses all things.

So the members of the British Association. To some of them Prof. Schwedoff's ideas were like slaps on the back of an environment-denying turtle: to some of them his heresy was like an offering of meat, raw and dripping, to milk-fed lambs. Some of them bleated like lambs, and some of them turled like turtles. We used to crucify, but now we ridicule: or, in the loss of vigor of all progress, the spike has etherealized into the laugh.

Sir William Thomson ridiculed the heresy, with the phantomosities of his era:

That all bodies, such as hailstones, if away from this earth's atmosphere, would have to move at planetary velocity—which would be positively reasonable if the pronouncements of St. Isaac were anything but articles of faith—that a hailstone falling through this earth's atmosphere, with planetary velocity, would perform 13,000 times as much work as would raise an equal weight of water one degree centigrade, and therefore never fall as a hailstone at all; be more than melted—super-volatalized—

These turls and these bleats of pedantry—though we insist that, relatively to 1882, these turls and bleats should be regarded as respectfully as we regard rag dolls that keep infants occupied and noiseless—it is the survival of rag dolls into maturity that we object to—so these pious and naïve ones who believed that 13,000 times something could have—that is, in quasi-existence—an exact and calculable resultant, whereas there is—in quasi-existence—nothing that can, except by delusion and convenience, be called a unit, in the first place—whose devotions to St. Isaac required blind belief in formulas of falling bodies—

Against data that were piling up, in their own time, of slow-falling meteorites; "milk warm" ones admitted even by Farrington and Merrill; at least one icy meteorite nowhere denied by the present orthodoxy, a datum as accessible to Thomson, in 1882, as it is now to us, because it was an occurrence of 1860. Beans and needles and tacks and a magnet. Needles and tacks adhere to and systematize relatively to a magnet, but, if some beans, too, be caught up, they are irreconcilables to this system and drop right out of it. A member of the Salvation Army may hear over and over data that seem so memorable to an evolutionist. It seems remarkable that they do not influence him—one finds that he cannot remember them. It is

incredible that Sir William Thomson had never heard of slow-falling, cold meteorites. It is simply that he had no power to remember such irreconcilabilities.

And then Mr. Symons again. Mr. Symons was a man who probably did more for the science of meteorology than did any other man of his time: therefore he probably did more to hold back the science of meteorology than did any other man of his time. In *Nature*, 41-135, Mr. Symons says that Prof. Schwedoff's ideas are "very droll."

I think that even more amusing is our own acceptance that, not very far above this earth's surface, is a region that will be the subject of a whole new science—super-geography—with which we shall immortalize ourselves in the resentments of the schoolboys of the future—

Pebbles and fragments of meteors and things from Mars and Jupiter and Azuria: wedges, delayed messages, cannon balls, bricks, nails, coal and coke and charcoal and offensive old cargoes—things that coat in ice in some regions and things that get into areas so warm that they putrefy—or that there are all the climates of geography in super-geography. I shall have to accept that, floating in the sky of this earth, there often are fields of ice as extensive as those on the Arctic Ocean—volumes of water in which are many fishes and frogs—tracts of land covered with caterpillars—

Aviators of the future. They fly up and up. Then they get out and walk. The fishing's good: the bait's right there. They find messages from other worlds—and within three weeks there's a big trade worked up in forged messages. Sometime I shall write a guide book to the Super-Sargasso Sea, for aviators, but just at present there wouldn't be much call for it.

We now have more of our expression upon hail as a concomitant, or more data of things that have fallen from the sky, with hail.

In general, the expression is:

These things may have been raised from some other part of the earth's surface, in whirlwinds, or may not have fallen, and may have been upon the ground, in the first place—but were the hailstones found with them, raised from some other part of the earth's surface, or were the hailstones upon the ground, in the first place?

As I said before, this expression is meaningless as to a few instances; it is reasonable to think of some coincidence between the fall of hail and the fall of other things: but, inasmuch as there have been a good many instances,—we begin to suspect that this is not so much a book we're writing as a

sanitarium for overworked coincidences. If not conceivably could very large hailstones and lumps of ice form in this earth's atmosphere, and so then had to come from external regions, then other things in or accompanying very large hailstones and lumps of ice came from external regions—which worries us a little: we may be instantly translated to the Positive Absolute.

Cosmos, 13-120, quotes a Virginia newspaper, that fishes said to have been catfishes, a foot long, some of them, had fallen, in 1853, at Norfolk, Virginia, with hail.

Vegetable debris, not only nuclear, but frozen upon the surfaces of large hailstones, at Toulouse, France, July 28, 1874. (*La Science Pour Tous*, 1874-270.)

Description of a storm, at Pontiac, Canada, July 11, 1864, in which it is said that it was not hailstones that fell, but "pieces of ice, from half an inch to over two inches in diameter" (*Canadian Naturalist*, 2-I-308):

"But the most extraordinary thing is that a respectable farmer, of undoubted veracity, says he picked up a piece of hail, or ice, in the center of which was a small green frog."

Storm at Dubuque, Iowa, June 16, 1882, in which fell hailstones and pieces of ice (*Monthly Weather Review*, June, 1882):

"The foreman of the Novelty Iron Works, of this city, states that in two large hailstones melted by him were found small living frogs." But the pieces of ice that fell upon this occasion had a peculiarity that indicates—though by as bizarre an indication as any we've had yet—that they had been for a long time motionless or floating somewhere. We'll take that up soon.

Living Age, 52-186:

That, June 30, 1841, fishes, one of which was ten inches long, fell at Boston; that, eight days later, fishes and ice fell at Derby.

In Timb's *Year Book*, 1842-275, it is said that, at Derby, the fishes had fallen in enormous numbers; from half an inch to two inches long, and some considerably larger. In the *Athenceum*, 1841-542, copied from the Sheffield *Patriot*, it is said that one of the fishes weighed three ounces. In several accounts, it is said that, with the fishes, fell many small frogs and "pieces of half-melted ice." We are told that the frogs and the fishes had been raised from some other part of the earth's surface, in a whirlwind; no whirlwind specified; nothing said as to what part of the earth's surface comes ice, in the month of July—interests us that the ice is described as

“half-melted.” In the London *Times,* July 15, 1841, it is said that the fishes were sticklebacks; that they had fallen with ice and small frogs, many of which had survived the fall. We note that, at Dunfermline, three months later (Oct. 7, 1841) fell many fishes, several inches in length, in a thunderstorm. (London *Times,* Oct. 12, 1841.)

Hailstones, we don’t care so much about. The matter of stratification seems significant, but we think more of the fall of lumps of ice from the sky, as possible data of the Super-Sargasso Sea:

Lumps of ice, a foot in circumference, Derbyshire, England, May 12, 1811 (*Annual Register,* 1811-54); cuboidal mass, six inches in diameter, that fell at Birmingham, 26 days later (Thomson, *Intro. to Meteorology,* p. 179); size of pumpkins, Bungalore, India, May 22, 1851 (*Rept. Brit. Assoc.,* 1855-35); masses of ice of a pound and a half each, New Hampshire, Aug. 13, 1851 (Lummis, *Meteor-ology,* p. 129); masses of ice, size of a man’s head, in the Delphos tornado (Ferrel, *Popular Treatise,* p. 428); large as a man’s hand, killing thousands of sheep, Texas, May 3, 1877 (*Monthly Weather Review,* May, 1877); “pieces of ice so large that they could not be grasped in one hand,” in a tornado, in Colorado, June 24, 1877 *{Monthly Weather Review,* June, 1877); lumps of ice four and a half inches long, Richmond, England, Aug. 2, 1879 (*Symons Met. Mag.,* 14-100); mass of ice, 21 inches in circumference that fell with hail, Iowa, June, 1881 (*Monthly Weather Review,* June, 1881); ‘pieces of ice” eight inches long, and an inch and a half thick, Davenport, Iowa, Aug. 30, 1882 (*Monthly Weather Review,* Aug., 1882); lump of ice size of a brick; weight two pounds, Chicago, July 12, 1883 (*Monthly Weather Review,* July, 1883); lumps of ice that weighed one pound and a half each, India, May (?), 1888 (*Nature,* 37-42); lump of ice weighing four pounds, Texas, Dec. 6, 1893 (*Sc. Am.,* 68-58); lumps of ice one pound in weight, Nov. 14, 1901, in a tornado, Victoria (*Meteorology of Australia,* p. 34).

Of course it is our acceptance that these masses not only accompanied tornadoes, but were brought down to this earth by tornadoes.

Flammarion, *The Atmosphere,* p. 34:

Block of ice, weighing four and a half pounds that fell at Cazorta, Spain, June 15, 1829; block of ice, weighing eleven pounds, at Cette, France, October, 1844; mass of ice three feet long, three feet wide, and more than two feet thick, that fell, in a storm, in Hungary, May 8, 1802.

Scientific American, 47-119:

That, according to the *Salina Journal,* a mass of ice weighing about 80 pounds had fallen from the sky, near Salina, Kansas, August, 1882. We are told that Mr. W. J. Hagler, the North Santa Fé merchant became possessor of it, and packed it in sawdust in his store.

London *Times,* April 7, 1860:

That, upon the 16th of March, 1860, in a snowstorm, in Upper Wasdale, blocks of ice, so large that at a distance they looked like a flock of sheep, had fallen.

Rept. Brit. Assoc., 1851-32:

That a mass of ice about a cubic yard in size had fallen at Candeish, India, 1828.

Against these data, though, so far as I know, so many of them have never been assembled together before, there is a silence upon the part of scientific men that is unusual. Our Super-Sargasso Sea may not be an unavoidable conclusion, but arrival upon this earth of ice from external regions does seem to be—except that there must be, be it ever so faint, a merger. It is in the notion that these masses of ice are only congealed hailstones. We have data against this notion, as applied to all our instances, but the explanation has been offered, and, it seems to me, may apply in some instances. In the *Bull. Soc. Astro, de France,* 20-245, it is said of blocks of ice the size of decanters that had fallen at Tunis that they were only masses of congealed hailstones.

London *Times,* Aug. 4, 1857.

That a block of ice, described as “pure” ice, weighing 25 pounds, had been found in the meadow of Mr. Warner, of Cricklewood. There had been a storm the day before. As in some of our other instances, no one had seen this object fall from the sky. It was found after the storm: that’s all that can be said about it.

Letter from Capt. Blakiston, communicated by Gen. Sabine, to the Royal Society (London *Roy. Soc. Proc.,* 10-468):

That, Jan. 14, 1860, in a thunderstorm, pieces of ice had fallen upon Capt. Blakiston’s vessel—that it was not hail. “It was not hail, but irregular-shaped pieces of solid ice of different dimensions, up to the size of half a brick.”

According to the *Advertiser-Scotsman,* quoted by the *Edinburgh New Philosophical Magazine,* 47-371, an irregular-shaped mass of ice fell at Ord, Scotland, August, 1849, after “an extraordinary peal of thunder.”

It is said that this was homogeneous ice, except in a small part, which looked like congealed hailstones.

The mass was about 20 feet in circumference.

The story, as told in the London *Times*, Aug. 14, 1849, is that, upon the evening of the 13th of August, 1849, after a loud peal of thunder, a mass of ice said to have been 20 feet in circumference, had fallen upon the estate of Mr. Moffat, of Balvullich, Ross shire. It is said that this object fell alone, or without hailstones.

Altogether, though it is not so strong for the Super-Sargasso Sea, I think this is one of our best expressions upon external origins. That large blocks of ice could form in the moisture of this earth's atmosphere is about as likely as that blocks of stone could form in a dust whirl. Of course, if ice or water comes to this earth from external sources, we think of at least minute organisms in it, and on, with our data, to frogs, fishes; on to anything that's thinkable, coming from external sources. It's of great importance to us to accept that large lumps of ice have fallen from the sky, but what we desire most—perhaps because of our interest in its archaeologic and paleontologic treasures—is now to be through with tentativeness and probation, and to take the Super-Sargasso Sea into full acceptance in our more advanced fold of the chosen of this twentieth century.

In the *Report of the British Association,* 1855-37, it is said that, at Poorhundur, India, Dec. 11, 1854, flat pieces of ice, many of them weighing several pounds—each, I suppose—had fallen from the sky. They are described as "large ice-flakes."

Vast fields of ice in the Super-Arctic regions, or strata, of the Super-Sargasso Sea. When they break up, their fragments are flake-like. In our acceptance, there are aerial ice-fields that are remote from this earth; that break up, fragments grinding against one another, rolling in vapor and water, of different constituency in different regions, forming slowly as stratified hailstones—but that there are ice-fields near this earth, that break up into just such flat pieces of ice as cover any pond or river when ice of a pond or river is broken, and are sometimes soon precipitated to the earth, in this familiar flat formation.

Symons' Met. Mag., 43-154:

A correspondent writes that, at Braemar, July 2, 1908, when the sky was clear overhead, and the sun shining, flat pieces of ice fell— from

somewhere. The sun was shining, but something was going on somewhere: thunder was heard.

Until I saw the reproduction of a photograph in the *Scientific American*, Feb. 21, 1914, I had supposed that these ice-fields must be, say, at least ten or twenty miles away from this earth, and invisible, to terrestrial observers, except as the blurs that have so often been reported by astronomers and meteorologists. The photograph published by the *Scientific American* is of an aggregation supposed to be clouds, presumably not very high, so clearly detailed are they. The writer says that they looked to him like "a field of broken ice." Beneath is a picture of a conventional field of ice, floating ordinarily in water. The resemblance between the two pictures is striking—nevertheless, it seems to me incredible that the first of the photographs could be of an aerial ice-field, or that gravitation could cease to act at only a mile or so from this earth's surface—

Unless:

The exceptional: the flux and vagary of all things.

Or that normally this earth's gravitation extends, say, ten or fifteen miles outward—but that gravitation must be rhythmic.

Of course, in the pseudo-formulas of astronomers, gravitation as a fixed quantity is essential. Accept that gravitation is a variable force, and astronomers deflate, with a perceptible hissing sound, into the punctured condition of economists, biologists, meteorologists, and all the others of the humbler divinities, who can admittedly offer only insecure approximations.

We refer all who would not like to hear the hiss of escaping arrogance, to Herbert Spencer's chapters upon the rhythm of all phenomena.

If everything else—light from the stars, .heat from the sun, the winds and the tides; forms and colors and sizes of animals; demands and supplies and prices; political opinions and chemic reactions and religious doctrines and magnetic intensities and the ticking of clocks; and arrival and departure of the seasons—if everything else is variable, we accept that the notion of gravitation as fixed and formulable is only another attempted positivism, doomed, like all other illusions of realness in quasi-existence. So it is intermediatism to accept that, though gravitation may approximate higher to invariability than do the winds, for instance, it must be somewhere between the Absolutes of Stability and Instability. Here then we are not much impressed with the opposition of physicists and astronomers, fearing, a little mournfully, that their language is of expiring sibilations.

So then the fields of ice in the sky, and that, though usually so far away as to be mere blurs, at times they come close enough to be seen in detail. For description of what I call a "blur," see *Pop Sci. News,* February, 1884—sky, in general, unusually clear, but, near the sun, "a white, slightly curdled haze, which was dazzlingly bright."

We accept that sometimes fields of ice pass between the sun and the earth: that many strata of ice, or very thick fields of ice, or superimposed fields would obscure the sun—that there have been occasions when the sun was eclipsed by fields of ice:

Flammarion, *The Atmosphere,* p. 394:

That a profound darkness came upon the city of Brussels, June 18, 1839:

There fell flat pieces of ice, an inch long.

Intense darkness at Aitkin, Minn., April 2, 1889: sand and "solid chunks of ice" reported to have fallen *{Science,* April 19, 1889).

In *Symons' Meteorological Magazine,* 32-172, are outlined roughedged but smooth-surfaced pieces of ice that fell at Manassas, Virginia, Aug. 10, 1897. They look as much like the roughly broken fragments of a smooth sheet of ice—as ever have roughly broken fragments of a smooth sheet of ice looked. About two inches across, and one inch thick. In *Cosmos,* 3-116, it is said that, at Rouen, July 5, 1853, fell irregular-shaped pieces of ice, about the size of a hand, described as looking as if all had been broken from one enormous block of ice. That, I think, was an aerial iceberg. In the awful density, or almost absolute stupidity of the 19th century, it never occurred to anybody to look for traces of polar bears or of seals upon these fragments.

Of course, seeing what we want to see, having been able to gather these data only because they are in agreement with notions formed in advance, we are not so respectful to our own notions as to a similar impression forced upon an observer who had no theory or acceptance to support. In general, our prejudices see and our prejudices investigate, but this should not be taken as an absolute.

Monthly Weather Review, July, 1894:

That, from the Weather Bureau, of Portland, Oregon, a tornado, of June 3, 1894, was reported.

Fragments of ice fell from the sky.

They averaged three to four inches square, and about an inch thick. In length and breadth they had the smooth surfaces required by our acceptance: and, according to the writer in the *Review,* "gave the impression

of a vast field of ice suspended in the atmosphere, and suddenly broken into fragments about the size of the palm of the hand."

This datum, profoundly of what we used to call the "damned," or before we could no longer accept judgment, or cut and dried condemnation by infants, turtles, and lambs, was copied—but without comment—in the *Scientific American,* 71-371.

Our theology is something like this:

Of course we ought to be damned—but we revolt against adjudication by infants, turtles, and lambs.

We now come to some remarkable data in a rather difficult department of super-geography. Vast fields of aerial ice. There's a lesson to me in the treachery of the imaginable. Most of our opposition is in the clearness with which the conventional, but impossible, becomes the imaginable, and then the resistant to modifications. After it had become the conventional with me, I conceived clearly of vast sheets of ice, a few miles above this earth—then the shining of the sun, and the ice partly melting—that note upon the ice that fell at Derby—water trickling and forming icicles upon the lower surface of the ice sheet. I seemed to look up and so clearly visualized those icicles hanging like stalactites from a flat-roofed cave, in white calcite. Or I looked up at the under side of an aerial ice-lump, and seemed to see a papillation similar to that observed by a calf at times. But then—but then—if icicles should form upon the under side of a sheet of aerial ice, that would be by the falling of water toward this earth; an icicle is of course an expression of gravitation—and, if water melting from ice should fall toward this earth, why not the ice itself fall before an icicle could have time to form? Of course, in quasi-existence, where everything is a paradox, one might argue that the water falls, but the ice does not, because the ice is heavier—that is, in masses. That notion, I think, belongs in a more advanced course than we are taking at present.

Our expression upon icicles:

A vast field of aerial ice—it is inert to this earth's gravitation— but by universal flux and variation, part of it sags closer to this earth, and is susceptible to gravitation—by cohesion with the main mass, this part does not fall, but water melting from it does fall, and forms icicles—then, by various disturbances, this part sometimes falls in fragments that are protrusive with icicles.

Of the ice that fell, some of it enclosing living frogs, at Dubuque, Iowa, June 16, 1882, it is said (*Monthly Weather Review,* June, 1882) that there were pieces from one to seventeen inches in circumference, the largest weighing one pound and three-quarters— that upon some of them were icicles half an inch in length. We emphasize that these objects were not hailstones.

The only merger is that of knobby hailstones, or of large hailstones with protuberances wrought by crystallization: but that is no merger with terrestrial phenomena, and such formations are unaccountable to orthodoxy; or it is incredible that hail could so crystallize—not forming by accretion—in the fall of a few seconds. For an account of such hailstones, see *Nature,* 61-594. Note the size— "some of them the size of turkeys' eggs."

It is our expression that sometimes the icicles themselves have fallen, as if by concussion, or as if something had swept against the under side of an aerial ice floe, detaching its papillations.

Monthly Weather Review, June, 1889:

That, at Oswego, N. Y., June 11, 1889, according to the Turin (N. Y.) *Leader,* there fell, in a thunderstorm, pieces of ice that "resembled the fragments of icicles."

Monthly Weather Review, 29-506:

That on Florence Island, St. Lawrence River, Aug. 8, 1901, with ordinary hail, fell pieces of ice "formed like icicles, the size and shape of lead pencils that had been cut into sections about three-eighths of an inch in length."

So our data of the Super-Sargasso Sea, and its Arctic region: and, for weeks at a time, an ice field may hang motionless over a part of this earth's surface—the sun has some effect upon it, but not much until late in the afternoon, I should say—part of it has sagged, but is held up by cohesion with the main mass—whereupon we have such an occurrence as would have been a little uncanny to us once upon a time—or fall of water from a cloudless sky, day after day, in one small part of this earth's surface, late in the afternoon, when the sun's rays had had time for their effects:

Monthly Weather Review, October, 1886:

That, according to the Charlotte *Chronicle,* Oct. 21, 1886, for three weeks there had been a fall of water from the sky, in Charlotte, N. C., localized in one particular spot, every afternoon, about three o'clock; that,

whether the sky was cloudy or cloudless, the water or rain fell upon a small patch of land between two trees and nowhere else.

This is the newspaper account, and, as such, it seems in the depths of the unchosen, either by me or any other expression of the Salvation Army. The account by the Signal Service observer, at Charlotte, published in the *Review*, follows:

"An unusual phenomenon was witnessed on the 21st: having been informed that, for some weeks prior to date, rain had been falling daily, after 3 P.M., on a particular spot, near two trees, corner of 9th and D streets, I visited the place, and saw precipitation in the form of rain drops at 4:47 and 4:55 P.M., while the sun was shining brightly. On the 22nd, I again visited the place, and from 4:05 to 4:25 P.M., a light shower of rain fell from a cloudless sky. . . . Sometimes the precipitation falls over an area of half an acre, but always appears to center at these two trees, and when lightest occurs there only."

14

WE see conventionally. It is not only that we think and act and speak and dress alike, because of our surrender to social attempt at Entity, in which we are only supercellular. We see what it is "proper" that we should see. It is orthodox enough to say that a horse is not a horse, to an infant—any more than is an orange an orange to the unsophisticated. It's interesting to walk along a street sometimes and look at things and wonder what they'd look like, if we hadn't been taught to see horses and trees and houses as horses and trees and houses. I think that to super-sight they are local stresses merging indistinguishably into one another, in an all-inclusive nexus.

I think that it would be credible enough to say that many times have Monstrator and Elvera and Azuria crossed telescopic fields of vision, and were not even seen—because it wouldn't be proper to see them; it wouldn't be respectable, and it wouldn't be respectful: it would be insulting to old bones to see them: it would bring on evil influences from the relics of St. Isaac to see them.

But our data:

Of vast worlds that are orbitless, or that are navigable, or that are adrift in inter-planetary tides and currents: the data that we shall have of their approach, in modern times, within five or six miles of this earth—

But then their visits, or approaches, to other planets, or to other of the few regularized bodies that have surrendered to the attempted Entity of this solar system as a whole—

The question that we can't very well evade:

Have these other worlds, or super-constructions, ever been seen by astronomers?

I think there would not be much approximation to realness in taking refuge in the notion of astronomers who stare and squint and see only that which it is respectable and respectful to see. It is all very well to say that astronomers are hypnotics, and that an astronomer looking at the moon is hypnotized by the moon, but our acceptance is that the bodies of this

present expression often visit the moon, or cross it, or are held in temporary suspension near it—then some of them must often have been within the diameter of an astronomer's hypnosis.

Our general expression:

That, upon the oceans of this earth, there are regularized vessels, but also that there are tramp vessels:

That, upon the super-ocean, there are regularized planets, but also that there are tramp worlds:

That astronomers are like mercantile purists who would deny commercial vagabondage.

Our acceptance is that vast celestial vagabonds have been excluded by astronomers, primarily because their irresponsibilities are an affront to the pure and the precise, or to attempted positivism; and secondarily because they have not been seen so very often. The planets steadily reflect the light of the sun: upon this uniformity a system that we call Primary Astronomy has been built up; but now the subject-matter of Advanced Astronomy is data of celestial phenomena that are sometimes light and sometimes dark, varying like some of the satellites of Jupiter, but with a wider range. However, light or dark, they have been seen and reported so often that the only important reason for their exclusion is—that they don't fit in.

With dark bodies that are probably external to our own solar system, I have, in the provincialism that no one can escape, not much concern. Dark bodies afloat in outer space would have been damned a few years ago, but now they're sanctioned by Prof. Barnard—and, if he says they're all right, you may think of them without the fear of doing something wrong or ridiculous—the close kinship we note so often between the evil and the absurd—I suppose by the ridiculous I mean the froth of evil. The dark companion of Algol, for instance. Though that's a clear case of celestial miscegenation, the purists, or positivists, admit that's so. In the *Proceedings of the National Academy of Science*, 1915-394, Prof. Barnard writes of an object—he calls it an "object"—in Cephus. His idea is that there are dark, opaque bodies outside this solar system. But in the *Astrophysical Journal*, 1916-1, he modifies into regarding them as "dark nebulae." That's not so interesting.

We accept that Venus, for instance, has often been visited by other worlds, or by super-constructions, from which come ciders and coke and coal; that sometimes these things have reflected light and have been seen

from this earth—by professional astronomers. It will be noted that throughout this chapter our data are accursed Brahmins—as, by hypnosis and inertia, we keep on and keep on saying, just as a good many of the scientists of the 19th century kept on and kept on admitting the power of the system that preceded them—or Continuity would be smashed. There's a big chance here for us to be instantaneously translated to the Positive Absolute — oh, well—

What I emphasize here is that our damned data are observations by astronomers of the highest standing, excommunicated by astronomers of similar standing—but backed up by the dominant spirit of their era—to which all minds had to equilibrate or be negligible, unheard, submerged. It would seem sometimes, in this book, as if our revolts were against the dogmatisms and pontifications of single scientists of eminence. This is only a convenience, because it seems necessary to personify. If we look over *Philosophical Transactions,* or the publications of the Royal Astronomical Society, for instance, we see that Herschel, for instance, was as powerless as any boy stargazer, to enforce acceptance of any observation of his that did not harmonize with the system that was growing up as independently of him and all other astronomers, as a phase in the development of an embryo compels all cells to take on appearances concordantly with the design and the predetermined progress and schedule of the whole.

Visitors to Venus:

Evans, *Ways of the Planets,* p. 140:

That, in 1645, a body large enough to look like a satellite was seen near Venus. Four times in the first half of the 18th century, a similar observation was reported. The last report occurred in 1767.

A large body has been seen—seven times, according to *Science Gossip,* 1886-178—near Venus. At least one astronomer, Houzeau, accepted these observations and named the—world, planet, super-construction—"Neith." His views are mentioned "in passing, but without endorsement," in the *Trans. N. Y. Acad.,* 5-249.

Houzeau or someone writing for the magazine-section of a Sunday newspaper—outer darkness for both alike. A new satellite in this solar system might be a little disturbing—though the formulas of Laplace, which were considered final in his day, have survived the admittance of five or six hundred bodies not included in those formulas—a satellite to Venus might be a little disturbing, but would be explained—but a large body approaching

a planet—staying awhile—going away—coming back some other time—anchoring, as it were—

Azuria is pretty bad, but Azuria is no worse than Neith.

Astrophysical Journal, 1-127:

A light-reflecting body, or a bright spot near Mars: seen Nov. 25, 1894, by Prof. Pickering and others, at the Lowell Observatory, above an unilluminated part of Mars—self-luminous, it would seem —thought to have been a cloud—but estimated to have been about twenty miles away from the planet.

Luminous spot seen moving across the disk of Mercury, in 1799, by Harding and Schroeter. (*Monthly Notices of the R. A. S.*, 38-338.)

In the first Bulletin issued by the Lowell Observatory, in 1903, Prof. Lowell describes a body that was seen on the terminator of Mars, May 20, 1903. On May 27, it was "suspected." If still there, it had moved, we are told, about 300 miles—"probably a dust cloud."

Very conspicuous and brilliant spots seen on the disk of Mars, October and November, 1911. (*Popular Astronomy*, Vol. 19, No. 10.)

So one of them accepted six or seven observations that were in agreement, except that they could not be regularized, upon a world —planet —satellite—and he gave it a name. He named it "Neith."

Monstrator and Elvera and Azuria and Super-Romanimus—

Or heresy and orthodoxy and the oneness of all quasiness, and our ways and means and methods are the very same. Or, if we name things that may not be, we are not of lonely guilt in the nomenclature of absences—

But now Leverrier and "Vulcan."

Leverrier again.

Or to demonstrate the collapsibility of a froth, stick a pin in the largest bubble of it. Astronomy and inflation: and by inflation we mean expansion of the attenuated. Or that the science of Astronomy is a phantom-film distended with myth-stuff—but always our acceptance that it approximates higher to substantiality than did the system that preceded it.

So Leverrier and the "planet Vulcan."

And we repeat, and it will do us small good to repeat. If you be of the masses that the astronomers have hypnotized—being themselves hypnotized, or they could not hypnotize others—or that the hypnotist's control is not the masterful power that it is popularly supposed to be, but only transference of state from one hypnotic to another—

If you be of the masses that the astronomers have hypnotized, you will not be able even to remember. Ten pages from here, and Leverrier and the "planet Vulcan" will have fallen from your mind, like beans from a magnet, or like data of cold meteorites from the mind of a Thomson.

Leverrier and the "planet Vulcan."

And much the good it will do us to repeat.

But at least temporarily we shall have an impression of a historic fiasco, such as, in our acceptance, could occur only in a quasi-existence.

In 1859, Dr. Lescarbault, an amateur astronomer, of Orgeres, France, announced that, upon March 26, of that year, he had seen a body of planetary size cross the sun. We are in a subject that is now as unholy to the present system as ever were its own subjects to the system that preceded it, or as ever were slanders against miracles to the preceding system. Nevertheless few text-books go so far as quite to disregard this tragedy. The method of the system-atists is slightingly to give a few instances of the unholy, and dispose of the few. If it were desirable to them to deny that there are mountains upon this earth, they would record a few observations upon some slight eminences near Orange, N. J., but say that commuters, though estimable persons in several ways, are likely to have their observations mixed. The text-books casually mention a few of the "supposed" observations upon "Vulcan," and then pass on.

Dr. Lescarbault wrote to Leverrier, who hastened to Orgères—

Because this announcement assimilated with his own calculations upon a planet between Mercury and the sun—

Because this solar system itself has never attained positiveness in the aspect of Regularity: there are to Mercury, as there are to Neptune, phenomena irreconcilable with the formulas, or motions that betray influence by something else.

We are told that Leverrier "satisfied himself as to the substantial accuracy of the reported observation." The story of this investigation is told in *Monthly Notices,* 20-98. It seems too bad to threaten the naïve little thing with our rude sophistications, but it is amusingly of the ingenuousness of the age from which present dogmas have survived. Lescarbault wrote to Leverrier. Leverrier hastened to . But he was careful not to tell Lescarbault who he was. Went right in and "subjected Dr. Lescarbault to a very severe cross-examination"—just the way you or I may feel at liberty to go into anybody's home and be severe with people—"pressing him hard step by

step”—just as anyone might go into someone else’s house and press him hard, though unknown to the hard-pressed one. Not until he was satisfied, did Leverrier reveal his identity. I suppose Dr. Lescarbault expressed astonishment. I think there’s something utopian about this: it’s so unlike the stand-offishness of New York life.

Leverrier gave the name “Vulcan” to the object that Dr. Lescar-bault had reported.

By the same means by which he is, even to this day, supposed— by the faithful—to have discovered Neptune, he had already announced the probable existence of an Intra-Mercurial body, or group of bodies. He had five observations besides Lescarbault’s upon something that had been seen to cross the sun. In accordance with the mathematical hypnoses of his era, he studied these six transits. Out of them he computed elements giving “Vulcan” a period of about 20 days, or a formula for heliocentric longitude at any time.

But he placed the time of best observation away up in 1877.

But even so, or considering that he still had probably a good many years to live, it may strike one that he was a little rash—that is if one has not gone very deep into the study of hypnoses—that, having “discovered” Neptune by a method which, in our acceptance, had no more to recommend it than had once equally well-thought-of methods of witch-finding, he should not have taken such chances: that if he was right as to Neptune, but should be wrong as to “Vulcan,” his average would be away below that of most fortune-tellers, who could scarcely hope to do business upon a fifty per cent, basis—all that the reasoning of a tyro in hypnoses.

The date:

March 22, 1877.

The scientific world was up on its hind legs nosing the sky. The thing had been done so authoritatively. Never a pope had said a thing with more of the seeming of finality. If six observations correlated, what more could be asked? The Editor of *Nature*, a week before the predicted event, though cautious, said that it is difficult to explain how six observers, unknown to one another, could have data that could be formulated, if they were not related phenomena.

In a way, at this point occurs the crisis of our whole book.

Formulas are against us.

But can astronomic formulas, backed up by observations in agreement, taken many years apart, calculated by a Leverrier, be as meaningless, in a positive sense, as all other quasi-things that we have encountered so far?

The preparations they made, before March 22, 1877. In England, the Astronomer Royal made it the expectation of his life: notified observers at Madras, Melbourne, Sydney, and New Zealand, and arranged with observers in Chili and the United States. M. Struve had prepared for observations in Siberia and Japan—

March 22, 1877—

Not absolutely, hypocritically, I think it's pathetic, myself. If anyone should doubt the sincerity of Leverrier, in this matter, we note, whether it has meaning or not, that a few months later he died.

I think we'll take up Monstrator, though there's so much to this subject that we'll have to come back.

According to the *Annual Register*, 9-120, upon the 9th of August, 1762, M. de Rostan, of Basle, France, was taking altitudes of the sun, at Lausanne. He saw a vast, spindle-shaped body, about three of the sun's digits in breadth and nine in length, advancing slowly across the disk of the sun, or "at no more than half the velocity with which the ordinary solar spots move." It did not disappear until the 7th of September, when it reached the sun's limb. Because of the spindle-like form, I incline to think of a super-Zeppelin, but another observation, which seems to indicate that it was a world, is that, though it was opaque, and "eclipsed the sun," it had around it a kind of nebulosity—or atmosphere? A penumbra would ordinarily be a datum of a sun spot, but there are observations that indicate that this object was at a considerable distance from the sun:

It is recorded that another observer, at Paris, watching the sun, at this time, had not seen this object;

But that M. Croste, at Sole, about forty-five German leagues northward from Lausanne, had seen it, describing the same spindle-form, but disagreeing a little as to breadth. Then comes the important point: that he and M. de Rostan did not see it upon the same part of the sun. This, then, is parallax, and, compounded with invisibility at Paris, is great parallax—or that, in the course of a month, in the summer of 1762, a large, opaque, spindle-shaped body traversed the disk of the sun, but at a great distance from the sun. The writer in the *Register* says: "In a word, we know of nothing to have recourse to, in the heavens, by which to explain this

phenomenon." I suppose he was not a hopeless addict to explaining. Extraordinary—we fear he must have been a man of loose habits in some other respects.

As to us—

Monstrator.

In the *Monthly Notices of the R. A. S.*, February, 1877, Leverrier, who never lost faith, up to the last day, gives the six observations upon an unknown body of planetary size, that he had formulated:

Fritsche, Oct. 10, 1802; Stark, Oct. 9, 1819; De Cuppis, Oct. 30, 1839; Sidebotham, Nov. 12, 1849; Lescarbault, March 26, 1859; Lummis, March 20, 1862.

If we weren't so accustomed to Science in its essential aspect of Disregard, we'd be mystified and impressed, like the Editor of *Nature*, with the formulation of these data: agreement of so many instances would seem incredible as a coincidence: but our acceptance is that, with just enough disregard, astronomers and fortune-tellers can formulate anything—or we'd engage, ourselves, to formulate periodicities in the crowds in Broadway—say that every Wednesday morning, a tall man, with one leg and a black eye, carrying a rubber plant, passes the Singer Building, at quarter past ten o'clock. Of course it couldn't really be done, unless such a man did have such periodicity, but if some Wednesday mornings it should be a small child lugging a barrel, or a fat negress with a week's wash, by ordinary disregard that would be prediction good enough for the kind of quasi-existence we're in.

So whether we accuse, or whether we think that the word "accuse" over-dignifies an attitude toward a quasi-astronomer, or mere figment in a super-dream, our acceptance is that Leverrier never did formulate observations—

That he picked out observations that could be formulated—

That of this type are all formulas—

That, if Leverrier had not been himself helplessly hypnotized, or if he had had in him more than a tincture of realness, never could he have been beguiled by such a quasi-process: but that he was hypnotized, and so extended, or transferred, his condition to others, that upon March 22, 1877, he had this earth bristling with telescopes, with the rigid and almost inanimate forms of astronomers behind them—

And not a blessed thing of any unusuality was seen upon that day or succeeding days.

But that the science of Astronomy suffered the slightest in prestige?

It couldn't. The spirit of 1877 was behind it. If, in an embryo, some cells should not live up to the phenomena of their era, the others will sustain the scheduled appearances. Not until an embryo enters the mammalian stage are cells of the reptilian stage false cells.

It is our acceptance that there were many equally authentic reports upon large planetary bodies that had been seen near the sun; that, of many, Leverrier picked out six; not then deciding that all the other observations related to still other large, planetary bodies, but arbitrarily, or hypnotically, disregarding—or heroically disregarding—every one of them—that to formulate at all he had to exclude falsely. The denouement killed him, I think. I'm not at all inclined to place him with the Grays and Hitchcocks and Symonses. I'm not, because, though it was rather unsportsmanlike to put the date so far ahead, he did give a date, and he did stick to it with such a high approximation—

I think Leverrier was translated to the Positive Absolute.

The disregarded:

Observation, of July 26, 1819, by Gruthinson—but that was of two bodies that crossed the sun together—

Nature, 14-469:

That, according to the astronomer, J. R. Hind, Benjamin Scott, City Chamberlain of London, and Mr. Wray, had, in 1847, seen a body similar to "Vulcan" cross the sun.

Similar observation by Hind and Lowe, March 12, 1849 (*L'Année Scien tifiq ue, 1*876-9).

Nature, 14-505:

Body of apparent size of Mercury, seen, Jan. 29, 1860, by F. A. R. Russell and four other observers, crossing the sun.

De Vico's observation of July 12, 1837 (*Observatory,* 2-424).

L'Année Scientifique, 1865-16:

That another amateur astronomer, M. Coumbray, of Constantinople, had written to Leverrier, that, upon the 8th of March, 1865, he had seen a black point, sharply outlined, traverse the disk of the sun. It detached itself from a group of sun spots near the limb of the sun, and took 48 minutes to reach the other limb. Figuring upon the diagram sent by M. Coumbray, a central passage would have taken a little more than an hour. This observation was disregarded by Leverrier, because his formula required about four times that

velocity. The point here is that these other observations are as authentic as those that Leverrier included; that, then, upon data as good as the data of "Vulcan," there must be other "Vulcans"—the heroic and defiant disregard, then, of trying to formulate one, omitting the others, which, by orthodox doctrine, must have influenced it greatly, if all were in the relatively narrow space between Mercury and the sun.

Observation upon another such body, of April 4, 1876, by M. Weber, of Berlin. As to this observation, Leverrier was informed by Wolf, in August, 1876 (*L'Année Scientifique*, 1876-7). It made no difference, so far as can be known, to this notable positivist.

Two other observations noted by Hind and Denning—London *Times*, Nov. 3, 1871, and March 26, 1873.

Monthly Notices of the R. A. S., 20-100:

Standacher, February, 1762; Lichtenberg, Nov. 19, 1762; Hoffman, May, 1764; Dangos, Jan. 18, 1798; Stark, Feb. 12, 1820. An observation by Schmidt, Oct. 11, 1847, is said to be doubtful: but, upon page 192, it is said that this doubt had arisen because of a mistaken translation, and two other observations by Schmidt are given: Oct. 14, 1849, and Feb. 18, 1850—also an observation by Lofft, Jan. 6, 1818. Observation by Steinheibel, at Vienna, April 27, 1820 (*Monthly Notices*, 1862).

Haase had collected reports of twenty observations like Lescar-bault's. The list was published in 1872, by Wolf. Also there are other instances like Gruthinsen's:

Amer. Jour. Sci., 2-28-446:

Report by Pastorff that he had seen twice in 1836, and once in 1837, two round spots of unequal size moving across the sun, changing position relatively to each other, and taking a different course, if not orbit, each time: that, in 1834, he had seen similar bodies pass six times across the disk of the sun, looking very much like Mercury in his transits.

March 22, 1876—

But to point out Leverrier's poverty-stricken average—or discovering planets upon a fifty per cent. basis—would be to point out the low percentage of realness in the quasi-myth-stuff of which the whole system is composed. We do not accuse the text-books of omitting this fiasco, but we do note that theirs is the conventional adaptation here of all beguilers who are in difficulties—

The diverting of attention.

It wouldn't be possible in a real existence, with real mentality, to deal with, but I suppose it's good enough for the quasi-intellects that stupefy themselves with text-books. The trick here is to gloss over Leverrier's mistake, and blame Lescarbault—he was only an amateur—had delusions. The reader's attention is led against Lescar-bault by a report from M. Lias, director of the Brazilian Coast Survey, who, at the time of Lescarbault's "supposed" observation had been watching the sun in Brazil, and, instead of seeing even ordinary sun spots, had noted that the region of the "supposed transit" was of "uniform intensity."

But the meaninglessness of all utterances in quasi-existence—

"Uniform intensity" turns our way as much as against us—or some day some brain will conceive a way of beating Newton's third law—if every reaction, or resistance, is, or can be, interpretable as stimulus instead of resistance—if this could be done in mechanics, there's a way open here for someone to own the world—specifically in this matter, "uniform intensity" means that Lescarbault saw no ordinary sun spot, just as much as it means that no spot at all was seen upon the sun. Continuing the interpretation of a resistance as an assistance, which can always be done with mental forces—making us wonder what applications could be made with steam and electric forces—we point out that invisibility in Brazil means parallax quite as truly as it means absence, and, inasmuch as "Vulcan" was supposed to be distant from the sun, we interpret denial as corroboration—method of course of every scientist, politician, theologian, high-school debater.

So the text-books, with no especial cleverness, because no especial cleverness is needed, lead the reader into contempt for the amateur of Orgères, and forgetfulness of Leverrier—and some other subject is taken up.

But our own acceptance:

That these data are as good as ever they were;

That, if someone of eminence should predict an earthquake, and if there should be no earthquake at the predicted time, that would discredit the prophet, but data of past earthquakes would remain as good as ever they had been. It is easy enough to smile at the illusion of a single amateur—

The mass-formation:

Fritsche, Stark, De Cuppis, Sidebotham, Lescarbault, Lummis, Gruthinson, De Vico, Scott, Wray, Russell, Hind, Lowe, Coumbray, Weber,

Standacher, Lichtenberg, Dangos, Hoffman, Schmidt, Lofft, Steinheibel, Pastorff—

These are only the observations conventionally listed relatively to an Intra-Mercurial planet. They are formidable enough to prevent our being diverted, as if it were all the dream of a lonely amateur— but they're a mere advance-guard. From now on other data of large celestial bodies, some dark and some reflecting light, will pass and pass and keep on passing—

So that some of us will remember a thing or two, after the procession's over—possibly.

Taking up only one of the listed observations—

Or our impression that the discrediting of Leverrier has nothing to do with the acceptability of these data:

In the London *Times*, Jan. 10, 1860, is Benjamin Scott's account of his observation:

That, in the summer of 1847, he had seen a body that had seemed to be the size of Venus, crossing the sun. He says that, hardly believing the evidence of his sense of sight, he had looked for someone, whose hopes or ambitions would not make him so subject to illusion. He had told his little son, aged five years, to look through the telescope. The child had exclaimed that he had seen "a little balloon" crossing the sun. Scott says that he had not had sufficient self-reliance to make public announcement of his remarkable observation at the time, but that, in the evening of the same day, he had told Dr. Dick, F.R.A.S., who had cited other instances. In the *Times*, Jan. 12, 1860, is published a letter from Richard Abbott, F.R.A.S.: that he remembered Mr. Scott's letter to him upon this observation, at the time of the occurrence.

I suppose that, at the beginning of this chapter, one had the notion that, by hard scratching through musty old records we might rake up vague, more than doubtful data, distortable into what's called evidence of unrecognized worlds or constructions of planetary size—

But the high authenticity and the support and the modernity of these of the accursed that we are now considering—

And our acceptance that ours is a quasi-existence, in which above all other things, hopes, ambitions, emotions, motivations, stands Attempt to Positivize: that we are here considering an attempt to systematize that is sheer fanaticism in its disregard of the unsys-tematizable—that it

represented the highest good in the 19th century—that it is mono-mania, but heroic mono-mania that was quasi-divine in the 19th century—

But that this isn't the 19th century.

As a doubly sponsored Brahmin—in the regard of Baptists—the objects of July 29, 1878, stand out and proclaim themselves so that nothing but disregard of the intensity of mono-mania can account for their reception by the system:

Or the total eclipse of July 29, 1878, and the reports by Prof. Watson, from Rawlins, Wyoming, and by Prof. Swift, from Denver, Colorado: that they had seen two shining objects at a considerable distance from the sun.

It's quite in accord with our general expression: not that there is an Intra-Mercurial planet, but that there are different bodies, many vast things; near this earth sometimes, near the sun sometimes; orbitless worlds, which, because of scarcely any data of collisions, we think of as under navigable control—or dirigible super-constructions.

Prof. Watson and Prof. Swift published their observations.

Then the disregard that we cannot think of in terms of ordinary, sane exclusions.

The text-book systematists begin by telling us that the trouble with these observations is that they disagree widely: there is considerable respectfulness, especially for Prof. Swift, but we are told that by coincidence these two astronomers, hundreds of miles apart, were illuded: their observations were so different—

Prof. Swift (*Nature*, Sept. 19, 1878):

That his own observation was "in close approximation to that given by Prof. Watson."

In the *Observatory*, 2-161, Swift says that his observations and Watson's were "confirmatory of each other."

The faithful try again:

That Watson and Swift mistook stars for other bodies.

In the *Observatory*, 2-193, Prof. Watson says that he had previously committed to memory all stars near the sun, down to the seventh magnitude —

And he's damned anyway.

How such exclusions work out is shown by Lockyer (*Nature*, Aug. 20, 1878). He says: "There is little doubt that an Intra-Mercurial planet has been discovered by Prof. Watson."

That was before excommunication was pronounced.

He says:

"If it will fit one of Leverrier's orbits"—

It didn't fit.

In *Nature*, 21-301, Prof. Swift says:

"I have never made a more valid observation, nor one more free from doubt."

He's damned anyway.

We shall have some data that will not live up to most rigorous requirements, but, if anyone would like to read how carefully and minutely these two sets of observations were made, see Prof. Swift's detailed description in the *Am. Jour. Sci.*, 116-313; and the technicalities of Prof. Watson's observations in *Monthly Notices*, 38-525

Our own acceptance upon dirigible worlds, which is assuredly enough, more nearly real than attempted concepts of large planets relatively near this earth, moving in orbits, but visible only occasionally; which more nearly approximates to reasonableness than does wholesale slaughter of Swift and Watson and Fritsche and Stark and De Cuppis—but our own acceptance is so painful to so many minds that, in another of the charitable moments that we have now and then for the sake of contrast, we offer relief:

The things seen high in the sky by Swift and Watson—

Well, only two months before—the horse and the barn—

We go on with more observations by astronomers, recognizing that it is the very thing that has given them life, sustained them, held them together, that has crushed all but the quasi-gleam of independent life out of them. Were they not systematized, they could not be at all, except sporadically and without sustenance. They are systematized: they must not vary from the conditions of the system: they must not break away for themselves.

The two great commandments:

Thou shalt not break Continuity;

Thou shalt try.

We go on with these disregarded data, some of which, many of which, are of the highest degree of acceptability. It is the System that pulls back its variations, as this earth is pulling back the Matterhorn. It is the System that nourishes and rewards, and also freezes out life with the chill of disregard. We do note that, before excommunication is pronounced, orthodox journals do liberally enough record unassimilable observations.

All things merge away into everything else.

That is Continuity.

So the System merges away and evades us when we try to focus against it.

We have complained a great deal. At least we are not so dull as to have the delusion that we know just exactly what it is that we are complaining about. We speak seemingly definitely enough of “the System,” but we’re building upon observations by members of that very system. Or what we are doing—gathering up the loose heresies of the orthodox. Of course “the System” fringes and ravels away, having no real outline. A Swift will antagonize “the System,” and a Lockyer will call him back; but, then, a Lockyer will vary with a “meteoric hypothesis,” and a Swift will, in turn, represent “the System.” This state is to us typical of all intermediatist phenomena; or that not conceivably is anything really anything, if its parts are likely to be their own opposites at any time. We speak of astronomers—as if there were real astronomers—but who have lost their identity in a System—as if it were a real System—but behind that System is plainly a rapport, or loss of identity in the Spirit of an Era.

Bodies that have looked like dark bodies, and lights that may have been sunlight reflected from interplanetary—objects, masses, constructions—

Lights that have been seen upon—or near?—the moon:

In *Philosophical Transactions*, 82-27, is Herschel’s report upon many luminous points, which he saw upon—or near?—the moon, during an eclipse. Why they should be luminous, whereas the moon itself was dark, would get us into a lot of trouble—except that later we shall, or we sha’n’t, accept that many times have luminous objects been seen close to this earth—at night.

But numerousness is a new factor, or new disturbance, to our explorations—

A new aspect of inter-planetary inhabitancy or occupancy—

Worlds in hordes—or beings—winged beings perhaps—wouldn’t astonish me if we should end up by discovering angels—or beings in machines—argosies of celestial voyagers—

In 1783 and 1787, Herschel reported more lights on or near the moon, which he supposed were volcanic.

The word of a Herschel has had no more weight, in divergences from the orthodox, than has had the word of a Lescarbault. These observations are of

the disregarded.

Bright spots seen on the moon, November, 1821 (*Proc. London Roy. Soc.*, 2-167).

For four other instances, see Loomis (*Treatise on Astronomy,* p. 174).

A moving light is reported in *Phil. Trans.,* 84-429. To the writer, it looked like a star passing over the moon—"which, on the next moment's consideration I knew to be impossible." "It was a fixed, steady light upon the dark part of the moon." I suppose "fixed" applies to luster.

In the *Report of the Brit. Assoc.,* 1847-18, there is an observation by Rankin, upon luminous points seen on the shaded part of the moon, during an eclipse. They seemed to this observer like reflections of stars. That's not very reasonable: however, we have, in the *Annual Register,* 1821-687, a light not referable to a star— because it moved with the moon: was seen three nights in succession; reported by Capt. Kater. See *Quart. Jour. Roy. Inst.*, 12-133.

Phil. Trans., 112-237:

Report from the Cape Town Observatory: a whitish spot on the dark part of the moon's limb. Three smaller lights were seen.

The call of positiveness, in its aspects of singleness, or homogeneity, or oneness, or completeness. In data now coming, I feel it myself. A Leverrier studies more than twenty observations. The inclination is irresistible to think that they all relate to one phenomenon. It is an expression of cosmic inclination. Most of the observations are so irreconcilable with any acceptance other than of orbitless, dirigible worlds that he shuts his eyes to more than two-thirds of them; he picks out six that can give him the illusion of completeness, or of all relating to one planet.

Or let it be that we have data of many dark bodies—still do we incline almost irresistibly to think of one of them as the dark-body-in-chief. Dark bodies, floating, or navigating, in inter-planetary space —and I conceive of one that's the Prince of Dark Bodies:

Melanicus.

Vast dark thing with the wings of a super-bat, or jet-black super-construction; most likely one of the spores of the Evil One.

The extraordinary year, 1883:

London *Times,* Dec. 17, 1883:

Extract from a letter by Hicks Pashaw: that, in Egypt, Sept. 24, 1883, he had seen, through glasses, "an immense black spot upon the lower part of

the sun."

Sun spot, maybe.

One night an astronomer was looking up at the sky, when something obscured a star, for three and a half seconds. A meteor had been seen nearby, but its train had been only momentarily visible. Dr. Wolf was the astronomer (*Nature*, 86-528).

The next datum is one of the most sensational we have, except that there is very little to it. A dark object that was seen by Prof. Heis, for eleven degrees of arc, moving slowly across the Milky Way. (Greg's Catalogue, *Rept. Brit. Assoc.*, 1867-426.)

One of our quasi-reasons for accepting that orbitless worlds are dirigible is the almost complete absence of data of collisions: of course, though in defiance of gravitation, they may, without direction like human direction, adjust to one another in the way of vortex rings of smoke—a very human-like way, that is. But in *Knowledge*, February, 1894, are two photographs of Brooks' comet that are shown as evidence of its seeming collision with a dark object, October, 1893. Our own wording is that it "struck against something": Prof. Barnard's is that it had "entered some dense medium, which shattered it." For all I know it had knocked against merely a field of ice.

Melanicus.

That upon the wings of a super-bat, he broods over this earth and over other worlds, perhaps deriving something from them: hovers on wings, or wing-like appendages, or planes that are hundreds of miles from tip to tip—a super-evil thing that is exploiting us. By Evil I mean that which makes us useful.

He obscures a star. He shoves a comet. I think he's a vast, black, brooding vampire.

Science, July 31, 1896:

That, according to a newspaper account, Mr. W. R. Brooks, director of the Smith Observatory, had seen a dark round object pass rather slowly across the moon, in a horizontal direction. In Mr. Brooks' opinion it was a dark meteor. In *Science*, Sept. 14, 1896, a correspondent writes that, in his opinion, it may have been a bird. We shall have no trouble with the meteor and bird mergers, if we have observations of long duration and estimates of size up to hundreds of miles. As to the body that was seen by Brooks, there is a note from the Dutch astronomer, Muller, in the *Scientific American*, 75-

251, that, upon April 4, 1892, he had seen a similar phenomenon. In *Science Gossip,* n.s., 3-135, are more details of the Brooks object—apparent diameter about one-thirtieth of the moon's—moon's disk crossed in three or four seconds. The writer, in *Science Gossip,* says that, on June 27, 1896, at one o'clock in the morning, he was looking at the moon with a 2-inch achromatic, power 44, when a long black object sailed past, from west to east, the transit occupying 3 or 4 seconds. He believed this object to be a bird—there was, however, no fluttering motion observable in it.

In the *Astronomische Nachrichten,* No. 3477, Dr. Brendel, of Griefswald, Pomerania, writes that Postmaster Ziegler and other observers had seen a body about 6 feet in diameter crossing the sun's disk. The duration here indicates something far from the earth, and also far from the sun. This thing was seen a quarter of an hour before it reached the sun. Time in crossing the sun was about an hour. After leaving the sun it was visible an hour.

I think he's a vast, black vampire that sometimes broods over this earth and other bodies.

Communication from Dr. F. B. Harris (*Popular Astronomy,* 20-398):

That, upon the evening of Jan. 27, 1912, Dr. Harris saw, upon the moon, "an intensely black object." He estimated it to be 250 miles long and 50 miles wide. "The object resembled a crow poised, as near as anything." Clouds then cut off observation.

Dr. Harris writes:

"I cannot but think that a very interesting and curious phenomenon happened."

15

SHORT chapter coming now, and it's the worst of them all. I think it's speculative. It's a lapse from our usual pseudo-standards. I think it must mean that the preceding chapter was very efficiently done, and that now by the rhythm of all quasi-things—which can't be real things, if they're rhythms, because a rhythm is an appearance that turns into its own opposite and then back again—but now, to pay up, we're what we weren't. Short chapter, and I think we'll fill in with several points in Intermediatism.

A puzzle:

If it is our acceptance that, out of the Negative Absolute, the Positive Absolute is generating itself, recruiting, or maintaining, itself, via a third state, or our own quasi-state, it would seem that we're trying to conceive of Universalness manufacturing more Universalness from Nothingness. Take that up yourself, if you're willing to run the risk of disappearing with such velocity that you'll leave an incandescent train behind, and risk being infinitely happy forever, whereas you probably don't want to be happy—I'll side-step that myself, and try to be intelligible by regarding the Positive Absolute from the aspect of Realness instead of Universalness, recalling that by both Realness and Universalness we mean the same state, or that which does not merge away into something else, because there is nothing else. So the idea is that out of Unrealness, instead of Nothingness, Realness, instead of Universal-ness, is, via our own quasi-state, manufacturing more Realness. Just so, but in relative terms, of course, all imaginings that materialize into machines or statues, buildings, dollars, paintings or books in paper and ink are graduations from unrealness to realness —in relative terms. It would seem then that Intermediateness is a relation between the Positive Absolute and the Negative Absolute. But the absolute cannot be the related—of course a confession that we can't really think of it at all, if here we think of a limit to the unlimited. Doing the best we can, and encouraged by the reflection that we can't do worse than has been done by metaphysicians in the past, we accept that the absolute can't be the related. So then that our quasi-state is not a real relation, if nothing in it is real. On

the other hand, it is not an unreal relation, if nothing in it is unreal. It seems thinkable that the Positive Absolute can, by means of Intermediateness, have a quasi-relation, or be only quasi-related, or be the unrelated, in final terms, or, at least, not be the related, in final terms.

As to free will and Intermediatism—same answer as to everything else. By free will we mean Independence—or that which does not merge away into something else—so, in Intermediateness, neither free-will nor slave-will—but a different approximation for every so-called person toward one or the other of the extremes. The hackneyed way of expressing this seems to me to be the acceptable way, if in Intermediateness, there is only the paradoxical: that we're free to do what we have to do.

I am not convinced that we make a fetish of the preposterous. I think our feeling is that in first gropings there's no knowing what will afterward be the acceptable. I think that if an early biologist heard of birds that grow on trees, he should record that he had heard of birds that grow on trees: then let sorting over of data occur afterward. The one thing that we try to tone down but that is to a great degree unavoidable is having our data all mixed up like Long Island and Florida in the minds of early American explorers. My own notion is that this whole book is very much like a map of North America in which the Hudson River is set down as a passage leading to Siberia. We think of Monstrator and Melanicus and of a world that is now in communication with this earth: if so, secretly, with certain esoteric ones upon this earth. Whether that world's Monstrator and Monstrator's Melanicus— must be the subject of later inquiry. It would be a gross thing to do: solve up everything now and leave nothing to our disciples.

I have been very much struck with phenomena of "cup marks."

They look to me like symbols of communication.

But they do not look to me like means of communication between some of the inhabitants of this earth and other inhabitants of this earth.

My own impression is that some external force has marked, with symbols, rocks of this earth, from far away.

I do not think that cup marks are inscribed communications among different inhabitants of this earth, because it seems too unacceptable that inhabitants of China, Scotland, and America should all have conceived of the same system.

Cup marks are strings of cup-like impressions in rocks. Sometimes there are rings around them, and sometimes they have only semi-circles. Great

Britain, America, France, Algeria, Circassia, Palestine: they're virtually everywhere—except in the far north, I think. In China, cliffs are dotted with them. Upon a cliff near Lake Como, there is a maze of these markings. In Italy and Spain and India they occur in enormous numbers.

Given that a force, say, like electric force, could, from a distance, mark such a substance as rocks, as, from a distance of hundreds of miles, selenium can be marked by telephotographers—but I am of two minds—

The Lost Explorers from Somewhere, and an attempt, from Somewhere, to communicate with them: so a frenzy of showering of messages toward this earth, in the hope that some of them would mark rocks near the lost explorers—

Or that somewhere upon this earth, there is an especial rocky surface, or receptor, or polar construction, or a steep, conical hill, upon which for ages have been received messages from some other world; but that at times messages go astray and mark substances perhaps thousands of miles from the receptor;

That perhaps forces behind the history of this earth have left upon the rocks of Palestine and England and India and China records that may some day be deciphered, of their misdirected instructions to certain esoteric ones —Order of the Freemasons— the Jesuits—

I emphasize the row-formation of cup marks:

Prof. Douglas (*Saturday Review,* Nov. 24, 1883):

"Whatever may have been their motive, the cup-markers showed a decided liking for arranging their sculpturings in regularly spaced rows."

That cup marks are an archaic form of inscription was first suggested by Canon Greenwell many years ago. But more specifically adumbratory to our own expression are the observations of Rivett-Carnac (*Jour. Roy. Asiatic Soc.*, 1903-515):

That the Braille system of raised dots is an inverted arrangement of cup marks: also that there are strong resemblances to the Morse code. But no tame and systematized archaeologist can do more than casually point out resemblances, and merely suggest that strings of cup marks look like messages, because—China, Switzerland, Algeria, America—if messages they be, there seems to be no escape from attributing one origin to them—then, if messages they be, I accept one external origin, to which the whole surface of this earth was accessible, for them.

Something else that we emphasize:

That rows of cup marks have often been likened to footprints.

But, in this similitude, their unilinear arrangement must be disregarded—of course often they're mixed up in every way, but arrangement in single lines is very common. It is odd that they should so often be likened to footprints: I suppose there are exceptional cases, but unless it's something that hops on one foot, or a cat going along a narrow fence-top, I don't think of anything that makes footprints one directly ahead of another—Cop, in a station house, walking a chalk line, perhaps.

Upon the Witch's Stone, near Ratho, Scotland, there are twenty-four cups, varying in size from one and a half to three inches in diameter, arranged in approximately straight lines. Locally it is explained that these are tracks of dogs' feet (*Proc. Soc. Antiq. Scotland*, 2-4-79). Similar marks are scattered bewilderingly all around the Witch's Stone—like a frenzy of telegraphing, or like messages repeating and repeating, trying to localize differently.

In Inverness-shire, cup marks are called "fairies' footmarks." At Valna's church, Norway, and St. Peter's, Ambleteuse, there are such marks, said to be horses' hoofprints. The rocks of Clare, Ireland, are marked with prints supposed to have been made by a mythical cow (*Folklore*, 21-184).

We now have such a ghost of a thing that I'd not like to be interpreted as offering it as a datum: it simply illustrates what I mean by the notion of symbols, like cups, or like footprints, which, if like those of horses or cows, are the reverse of, or the negatives of, cups—of symbols that are regularly received somewhere upon this earth—steep, conical hill, somewhere, I think—but that have often alighted in wrong places—considerably to the mystification of persons waking up some morning to find them upon formerly blank spaces.

An ancient record—still worse, an ancient Chinese record—of a courtyard of a palace—dwellers of the palace waking up one morning, finding the courtyard marked with tracks like the footprints of an ox—supposed that the devil did it. (*Notes and Queries*, 9-6-225.)

16

ANGELS.

Hordes upon hordes of them.

Beings massed like the clouds of souls, or the commingling whiffs of spirituality, or the exhalations of souls that Doré pictured so often.

It may be that the Milky Way is a composition of stiff, frozen, finally-static, absolute angels. We shall have data of little Milky Ways, moving swiftly; or data of hosts of angels, not absolute, or still dynamic. I suspect, myself, that the fixed stars are really fixed, and that the minute motions said to have been detected in them are illusions. I think that the fixed stars are absolutes. Their twinkling is only the interpretation by an intermediatist state of them. I think that soon after Leverrier died, a new fixed star was discovered—that, if Dr. Gray had stuck to his story of the thousands of fishes from one pail of water, had written upon it, lectured upon it, taken to street corners, to convince the world that, whether conceivable or not, his explanation was the only true explanation: had thought of nothing but this last thing at night and first thing in the morning—his obituary—another "nova" reported in *Monthly Notices.*

I think that Milky Ways, of an inferior, or dynamic, order, have often been seen by astronomers. Of course it may be that the phenomena that we shall now consider are not angels at all. We are simply feeling around, trying to find out what we can accept. Some of our data indicate hosts of rotund and complacent tourists in inter-planetary space—but then data of long, lean, hungry ones. I think that there are, out in inter-planetary space, Super Tamerlanes at the head of hosts of celestial ravagers—which have come here and pounced upon civilizations of the past, cleaning them up all but their bones, or temples and monuments—for which later historians have invented exclusionist histories. But if something now has a legal right to us, and can enforce its proprietorship, they've been warned off. It's the way of all exploitation. I should say that we're now under cultivation: that we're conscious of it, but have the impertinence to attribute it all to our own nobler and higher instincts.

Against these notions is the same sense of finality that opposes all advance. It's why we rate acceptance as a better adaptation than belief. Opposing us is the strong belief that, as to interplanetary phenomena, virtually everything has been found out. Sense of finality and illusion of homogeneity. But that what is called advancing knowledge is violation of the sense of blankness.

A drop of water. Once upon a time water was considered so homogeneous that it was thought of as an element. The microscope —and not only that the supposititiously elementary was seen to be of infinite diversity, but that in its protoplasmic life there were new orders of beings.

Or the year 1491—and a European looking westward over the ocean—his feeling that that suave western droop was unbreakable; that gods of regularity would not permit that smooth horizon to be disturbed by coasts or spotted with islands. The unpleasantness of even contemplating such a state —wide, smooth west, so clean against the sky—spotted with islands—geographic leprosy.

But coasts and islands and Indians and bison, in the seemingly vacant west: lakes, mountains, rivers—

One looks up at the sky: the relative homogeneity of the relatively unexplored: one thinks of only a few kinds of phenomena. But the acceptance is forced upon me that there are modes and modes and modes of inter-planetary existence: things as different from planets and comets and meteors as Indians are from bison and prairie dogs: a super-geography—or celestiography—of vast stagnant regions, but also of Super-Niagaras and Ultra-Mississippis: and a super-sociology—voyagers and tourists and ravagers: the hunted and the hunting: the super-mercantile, the super-piratic, the super-evangelical.

Sense of homogeneity, or our positivist illusion of the unknown —and the fate of all positivism.

Astronomy and the academic.

Ethics and the abstract.

The universal attempt to formulate or to regularize—an attempt that can be made only by disregarding or denying.

Or all things disregard or deny that which will eventually invade and destroy them—

Until comes the day when some one thing shall say, and enforce upon Infinitude:

“Thus far shalt thou go: here is absolute demarcation.”

The final utterance:

“There is only I.”

In the *Monthly Notices of the R. A. S.,* 11-48, there is a letter from the Rev. W. Read:

That, upon the 4th of September, 1851, at 9:30 A.M., he had seen a host of self-luminous bodies, passing the field of his telescope, some slowly and some rapidly. They appeared to occupy a zone several degrees in breadth. The direction of most of them was due east to west, but some moved from north to south. The numbers were tremendous. They were observed for six hours.

Editor’s note:

“May not these appearances be attributed to an abnormal state of the optic nerves of the observer?”

In *Monthly Notices,* 12-38, Mr. Read answers that he had been a diligent observer, with instruments of a superior order, for about 28 years—”but I have never witnessed such an appearance before.” As to illusion he says that two other members of his family had seen the objects.

The Editor withdraws his suggestion.

We know what to expect. Almost absolutely—in an existence that is essentially Hibernian—we can predict the past—that is, look over something of this kind, written in 1851, and know what to expect from the Exclusionists later. If Mr. Read saw a migration of dissatisfied angels, numbering millions, they must merge away, at least subjectively, with commonplace terrestrial phenomena—of course disregarding Mr. Read’s probable familiarity, of 28 years’ duration, with the commonplaces of terrestrial phenomena.

Monthly Notices, 12-183:

Letter from Rev. W. R. Dawes:

That he had seen similar objects—and in the month of September —that they were nothing but seeds floating in the air.

In the *Report of the British Association,* 1852-235, there is a communication from Mr. Read to Prof. Baden-Powell:

That the objects that had been seen by him and by Mr. Dawes were not similar. He denies that he had seen seeds floating in the air. There had been little wind, and that had come from the sea, where seeds would not be likely to have origin. The objects that he had seen were round and sharply defined,

and with none of the feathery appearance of thistledown. He then quotes from a letter from C. B. Chalmers, F.R.A.S., who had seen a similar stream, a procession, or migration, except that some of the bodies were more elongated—or lean and hungry—than globular.

He might have argued for sixty-five years. He'd have impressed nobody—of importance. The super-motif, or dominant, of his era, was Exclusionism, and the notion of seeds in the air assimilates— with due disregards—with that dominant.

Or pageantries here upon our earth, and things looking down upon us—and the Crusades were only dust clouds, and glints of the sun on shining armor were only particles of mica in dust clouds. I think it was a Crusade that Read saw—but that it was right, relatively to the year 1851, to say that it was only seeds in the wind, whether the wind blew from the sea or not. I think of things that were luminous with religious zeal, mixed up, like everything else in Intermediateness, with black marauders and from gray to brown beings of little personal ambitions. There may have been a Richard Coeur de Lion, on his way to right wrongs in Jupiter. It was right, relatively to 1851, to say that he was a seed of a cabbage. Prof. Coffin, U.S.N. (*Jour. Frank. Inst.,* 88-151): That, during the eclipse of August, 1869, he had noted the passage, across his telescope, of several bright flakes resembling thistleblows, floating in the sunlight. But the telescope was so focused that, if these things were distinct, they must have been so far away from this earth that the difficulties of orthodoxy remain as great, one way or another, no matter what we think they were—

They were "well-defined," says Prof. Coffin.

Henry Waldner (*Nature,* 5-304):

That, April 27, 1863, he had seen great numbers of small, shining bodies passing from west to east. He had notified Dr. Wolf, of the Observatory of Zurich, who "had convinced himself of this strange phenomenon." Dr. Wolf had told him that similar bodies had been seen by Sig. Capocci, of the Capodimonte Observatory, at Naples, May 11, 1845.

The shapes were of great diversity—or different aspects of similar shapes?

Appendages were seen upon some of them.

We are told that some were star-shaped, with transparent appendages.

I think, myself, it was a Mohammed and his Hegira. May have been only his harem. Astonishing sensation: afloat in space with ten million wives

around one. Anyway, it would seem that we have considerable advantage here, inasmuch as seeds are not in season in April—but the pulling back to earth, the bedraggling by those sincere but dull ones of some time ago. We have the same stupidity—necessary, functioning stupidity—of attribution of something that was so rare that an astronomer notes only one instance between 1845 and 1863, to an everyday occurrence—

Or Mr. Waldner's assimilative opinion that he had seen only ice crystals.

Whether they were not very exclusive veils of a super-harem, or planes of a very light material, we have an impression of star-shaped things with transparent appendages that have been seen in the sky.

Hosts of small bodies—black, this time—that were seen by the astronomers Herrick, Buys-Ballot, and De Cuppis (*L'Année Scientifique*, 1860-25); vast numbers of bodies that were seen by M. Lamey, to cross the moon (*L'Année Scientifique*, 1874-62); another instance of dark ones; prodigious number of dark, spherical bodies reported by Messier, June 17, 1777 (Arago, *Œuvres*, 9-38); considerable number of luminous bodies which appeared to move out from the sun, in diverse directions; seen at Havana, during eclipse of the sun, May 15, 1836, by Prof. Auber (Poey); M. Poey cites a similar instance, of Aug. 3, 1886; M. Lotard's opinion that they were birds (*L'Astronomie*, 1886-391); large number of small bodies crossing disk of the sun, some swiftly, some slowly; most of them globular, but some seemingly triangular, and some of more complicated structure; seen by M. Trouvelet, who, whether seeds, insects, birds, or other commonplace things, had never seen anything resembling these forms (*L'AnnŒe Scientifique*, 1885-8); report from the Rio de Janeiro Observatory, of vast numbers of bodies crossing the sun, some of them luminous and some of them dark, from some time in December, 1875, until Jan. 22, 1876 (*La Nature*, 1876-384).

Of course, at a distance, any form is likely to look round or roundish: but we point out that we have notes upon the seeming of more complex forms. In L'*Astronomie*, 1886-70, is recorded M. Briguiere's observation, at Marseilles, April 15 and April 25, 1883, upon the crossing of the sun by bodies that were irregular in form. Some of them moved as if in alignment.

Letter from Sir Robert Inglis to Col. Sabine (*Rept. Brit. Assoc.*, 1849-17):

That, at 3 P.M., Aug. 8, 1849, at Gais, Switzerland, Inglis had seen thousands and thousands of brilliant white objects, like snowflakes in a cloudless sky. Though this display lasted about twenty-five minutes, not one

of these seeming snowflakes was seen to fall. Inglis says that his servant "fancied" that he had seen something like wings on these—whatever they were. Upon page 18, of the *Report*, Sir John Herschel says that, in 1845 or 1846, his attention had been attracted by objects of considerable size, in the air, seemingly not far away. He had looked at them through a telescope. He says that they were masses of hay, not less than a yard or two in diameter. Still there are some circumstances that interest me. He says that, though no less than a whirlwind could have sustained these masses, the air about him was calm. "No doubt wind prevailed at the spot, but there was no roaring noise." None of these masses fell within his observation or knowledge. To walk a few fields away and find out more would seem not much to expect from a man of science, but it is one of our superstitions, that such a seeming trifle is just what—by the Spirit of an Era, we'll call it—one is not permitted to do. If those things were not masses of hay, and if Herschel had walked a little and found out, and had reported that he had seen strange objects in the air—that report, in 1846, would have been as misplaced as the appearance of a tail upon an embryo still in its gastrula era. I have noticed this inhibition in my own case many times. Looking back—why didn't I do this or that little thing that would have cost so little and have meant so much? Didn't belong to that era of my own development.

Nature, 22-64:

That, at Kattenau, Germany, about half an hour before sunrise, March 22, 1880, "an enormous number of luminous bodies rose from the horizon, and passed in a horizontal direction from east to west." They are described as having appeared in a zone or belt. "They shone with a remarkably brilliant light."

So they've thrown lassos over our data to bring them back to earth. But they're lassos that cannot tighten. We can't pull out of them: we may step out of them, or lift them off. Some of us used to have an impression of Science sitting in calm, just judgment: some of us now feel that a good many of our data have been lynched. If a Crusade, perhaps from Mars to Jupiter, occur in the autumn— "seeds." If a Crusade or outpouring of celestial vandals is seen from this earth in the spring— "ice crystals." If we have record of a race of aerial beings, perhaps with no substantial habitat, seen by someone in India— "locusts."

This will be disregarded:

If locusts fly high, they freeze and fall in thousands.

Nature, 47-581:

Locusts that were seen in the mountains of India, at a height of 12,750 feet—"in swarms and dying by thousands."

But no matter whether they fly high or fly low, no one ever wonders what's in the air when locusts are passing overhead, because of the falling of stragglers. I have especially looked this matter up—no mystery when locusts are flying overhead—constant fall-ing of stragglers.

Monthly Notices, 30-135:

"An unusual phenomenon noticed by Lieut. Herschel, Oct. 17 and 18, 1870, while observing the sun, at Bangalore, India."

Lieut. Herschel had noticed dark shadows crossing the sun—but away from the sun there were luminous, moving images. For two days bodies passed in a continuous stream, varying in size and velocity.

The Lieutenant tries to explain, as we shall see, but he says:

"As it was, the continuous flight, for two whole days, in such numbers, in the upper regions of the air, of beasts that left no stragglers, is a wonder of natural history, if not of astronomy."

He tried different focusing—he saw wings—perhaps he saw planes. He says that he saw upon the objects either wings or phantom-like appendages.

Then he saw something that was so bizarre that, in the fullness of his nineteenth-centuriness, he writes:

"There was no longer doubt: they were locusts or flies of some sort."

One of them had paused.

It had hovered.

Then it had whisked off.

The Editor says that at that time "countless locusts had descended upon certain parts of India."

We now have an instance that is extraordinary in several respects—super-voyagers or super-ravagers; angels, ragamuffins, crusaders, emigrants, aeronauts, or aerial elephants, or bison or dinosaurs—except that I think the thing had planes or wings—one of them has been photographed. It may be that in the history of photography no more extraordinary picture than this has ever been taken.

L'Astronomie, 1885-347:

That, at the Observatory of Zacatecas, Mexico, Aug. 12, 1883, about 2,500 meters above sea level, were seen a large number of small luminous bodies, entering upon the disk of the sun. M. Bonilla telegraphed to the

Observatories of the City of Mexico and of Puebla. Word came back that the bodies were not visible there. Because of this parallax, M. Bonilla placed the bodies “relatively near the earth.” But when we find out what he called “relatively near the earth”—birds or bugs or hosts of a Super-Tamerlane or army of a celestial Richard Cœur de Lion—our heresies rejoice anyway. His estimate is “less distance than the moon.”

One of them was photographed. See *L’Astronomie,* 1885-349. The photograph shows a long body surrounded by indefinite structures, or by the haze of wings or planes in motion.

L’Astronomie, 1887-66;

Signor Ricco, of the Observatory of Palermo, writes that, Nov. 30, 1880, at 8:30 o’clock in the morning, he was watching the sun, when he saw, slowly traversing its disk, bodies in two long, parallel lines, and a shorter, parallel line. The bodies looked winged to him. But so large were they that he had to think of large birds. He thought of cranes.

He consulted ornithologists, and learned that the configuration of parallel lines agrees with the flight-formation of cranes. This was in 1880: anybody now living in New York City, for instance, would tell him that also it is a familiar formation of aeroplanes. But, because of data of focus and subtended angles, these beings or objects must have been high.

Sig. Ricco argues that condors have been known to fly three or four miles high, and that heights reached by other birds have been estimated at two or three miles. He says that cranes have been known to fly so high that they have been lost to view.

Our own acceptance, in conventional terms, is that there is not a bird of this earth that would not freeze to death at a height of more than four miles: that if condors fly three or four miles high, they are birds that are especially adapted to such altitudes.

Sig. Ricco’s estimate is that these objects or beings or cranes must have been at least five and a half miles high.

17

THE vast dark thing that looked like a poised crow of unholy dimensions. Assuming that I shall ever have any readers, let him, or both of them, if I shall ever have such popularity as that, note how dim that bold black datum is at the distance of only two chapters.

The question:

Was it a thing or the shadow of a thing?

Acceptance either way calls not for mere revision but revolution in the science of astronomy. But the dimness of the datum of only two chapters ago. The carved stone disk of Tarbes, and the rain that fell every afternoon for twenty—if I haven't forgotten, myself, whether it was twenty-three or twenty-five days!—upon one small area. We are all Thomsons, with brains that have smooth and slippery, though corrugated, surfaces—or that all intellection is associative—or that we remember that which correlates with a dominant—and a few chapters go by, and there's scarcely an impression that hasn't slid off our smooth and slippery brains, of Leverrier and the "planet Vulcan." There are two ways by which irreconcilables can be remembered—if they can be correlated in a system more nearly real than the system that rejects them—and by repetition and repetition and repetition.

Vast black thing like a crow poised over the moon.

The datum is so important to us, because it enforces, in another field, our acceptance that dark bodies of planetary size traverse this solar system.

Our position:

That the things have been seen:

Also that their shadows have been seen.

Vast black thing poised like a crow over the moon. So far it is a single instance. By a single instance, we mean the negligible.

In *Popular Science*, 34-158, Serviss tells of a shadow that Schroeter saw, in 1788, in the lunar Alps. First he saw a light. But then, when this region was illuminated, he saw a round shadow where the light had been.

Our own expression:

That he saw a luminous object near the moon: that that part of the moon became illuminated, and the object was lost to view; but that then its shadow underneath was seen.

Serviss explains, of course. Otherwise he'd not be Prof. Serviss. It's a little contest in relative approximations to realness. Prof. Serviss thinks that what Schroeter saw was the "round" shadow of a mountain—in the region that had become lighted. He assumes that Schroeter never looked again to see whether the shadow could be attributed to a mountain. That's the crux: conceivably a mountain could cast a round—and that means detached—shadow, in the lighted part of the moon. Prof. Serviss could, of course, explain why he disregards the light in the first place—maybe it had always been there "in the first place." If he couldn't explain, he'd still be an amateur.

We have another datum. I think it is more extraordinary than—

Vast thing, black and poised, like a crow, over the moon.

But only because it's more circumstantial, and because it has corroboration, do I think it more extraordinary than—

Vast poised thing, black as a crow, over the moon.

Mr. H. C. Russell, who was usually as orthodox as anybody, I suppose—at least, he wrote "F.R.A.S." after his name—tells in the *Observatory,* 2-374, one of the wickedest, or most preposterous, stories that we have so far exhumed:

That he and another astronomer, G. D. Hirst, were in the Blue Mountains, near Sydney, N. S. W., and Mr. Hirst was looking at the moon—

He saw on the moon what Russell calls "one of those remarkable facts, which being seen should be recorded, although no explanation can at present be offered."

That may be so. It is very rarely done. Our own expression upon evolution by successive dominants and their correlates is against it. On the other hand, we express that every era records a few observations out of harmony with it, but adumbratory or preparatory to the spirit of eras still to come. It's very rarely done. Lashed by the phantom-scourge of a now passing era, the world of astronomers is in a state of terrorism, though of a highly attenuated, modernized, devitalized kind. Let an astronomer see something that is not of the conventional, celestial sights, or something that it is "improper" to see—his very dignity is in danger. Some one of the

corralled and scourged may stick a smile into his back. He'll be thought of unkindly.

With a hardihood that is unusual in his world of ethereal sensitivenesses, Russell says, of Hirst's observation:

"He found a large part of it covered with a dark shade, quite as dark as the shadow of the earth during an eclipse of the moon."

But the climax of hardihood or impropriety or wickedness, pre-posterousness or enlightenment:

"One could hardly resist the conviction that it was a shadow, yet it could not be the shadow of any known body."

Richard Proctor was a man of some liberality. After a while we shall have a letter, which once upon a time we'd have called delirious—don't know that we could read such a thing now, for the first time, without incredulous laughter—which Mr. Proctor permitted to be published in *Knowledge.* But a dark, unknown world that could cast a shadow upon a large part of the moon, perhaps extending far beyond the limb of the moon; a shadow as deep as the shadow of this earth—

Too much for Mr. Proctor's politeness.

I haven't read what he said, but it seems to have been a little coarse. Russell says that Proctor "freely used" his name in the *Echo,* of March 14, 1879, ridiculing this observation which had been made by Russell as well as Hirst. If it hadn't been Proctor, it would have been someone else—but one notes that the attack came out in a newspaper. There is no discussion of this remarkable subject, no mention in any other astronomic journal. The disregard was almost complete—but we do note that the columns of the *Observatory* were open to Russell to answer Proctor.

In the answer, I note considerable intermediateness. Far back in 1879, it would have been a beautiful positivism, if Russell had said—

"There was a shadow on the moon. Absolutely it was cast by an unknown body."

According to our religion, if he had then given all his time to the maintaining of this one stand, of course breaking all friendships, all ties with his fellow astronomers, his apotheosis would have occurred, greatly assisted by means well known to quasi-existence when its compromises and evasions, and phenomena that are partly this and partly that, are flouted by the definite and uncompromising. It would be impossible in a real existence, but Mr. Russell, of quasi-existence, says that he did resist the

conviction; that he had said that one could “hardly resist”; and most of his resentment is against Mr. Proctor’s thinking that he had not resisted. It seems too bad— if apotheosis be desirable.

The point in Intermediatism here is:

Not that to adapt to the conditions of quasi-existence is to have what is called success in quasi-existence, but is to lose one’s soul—

But is to lose “one’s” chance of attaining soul, self, or entity.

One indignation quoted from Proctor interests us:

“What happens on the moon may at any time happen to this earth.”

Or:

That is just the teaching of this department of Advanced Astronomy:

That Russell and Hirst saw the sun eclipsed relatively to the moon by a vast dark body;

That many times have eclipses occurred relatively to this earth, by vast, dark bodies;

That there have been many eclipses that have not been recognized as eclipses by scientific kindergartens.

There is a merger, of course. We’ll take a look at it first—that, after all, it may have been a shadow that Hirst and Russell saw, but the only significance is that the sun was eclipsed relatively to the moon by a cosmic haze of some kind, or a swarm of meteors close together, or a gaseous discharge left behind by a comet. My own acceptance is that vagueness of shadow is a function of vagueness of intervention; that a shadow as dense as the shadow of this earth is cast by a body denser than hazes and swarms. The information seems definite enough in this respect—“quite as dark as the shadow of this earth during the eclipse of the moon.”

Though we may not always be as patient toward them as we should be, it is our acceptance that the astronomic primitives have done a great deal of good work: for instance, in the allaying of fears upon this earth. Sometimes it may seem as if all science were to us very much like what a red flag is to bulls and anti-socialists. It’s not that: it’s more like what unsquare meals are to bulls and anti-socialists—not the scientific, but the insufficient. Our acceptance is that Evil is the negative state, by which we mean the state of maladjustment, discord, ugliness, disorganization, inconsistency, injustice, and so on—as determined in Intermediateness, not by real standards, but only by higher approximations to adjustment, harmony, beauty, organization, consistency, justice, and so on. Evil is outlived virtue, or

incipient virtue that has not yet established itself, or any other phenomenon that is not in seeming adjustment, harmony, consistency with a dominant. The astronomers have functioned bravely in the past. They've been good for business: the big interests think kindly, if at all, of them. It's bad for trade to have an intense darkness come upon an unaware community and frighten people out of their purchasing values. But if an obscuration be foretold, and if it then occur—may seem a little uncanny—only a shadow—and no one who was about to buy a pair of shoes runs home panic-stricken and saves the money.

Upon general principles we accept that astronomers have quasi-systematized data of eclipses—or have included some and disregarded others.

They have done well.

They have functioned.

But now they're negatives, or they're out of harmony—

If we are in harmony with a new dominant, or the spirit of a new era, in which Exclusionism must be overthrown; if we have data of many obscurations that have occurred, not only upon the moon, but upon our own earth, as convincing of vast intervening bodies, usually invisible, as is any regularized, predicted eclipse.

One looks up at the sky.

It seems incredible that, say, at the distance of the moon, there could be, but be invisible, a solid body, say, the size of the moon.

One looks up at the moon, at a time when only a crescent of it is visible. The tendency is to build up the rest of it in one's mind; but the unillumined part looks as vacant as the rest of the sky, and it's of the same blueness as the rest of the sky. There's a vast area of solid substance before one's eyes. It's indistinguishable from the sky.

In some of our little lessons upon the beauties of modesty and humility, we have picked out basic arrogances—tail of a peacock, horns of a stag, dollars of a capitalist—eclipses of astronomers. Though I have no desire for the job, I'd engage to list hundreds of instances in which the report upon an expected eclipse has been "sky overcast" or "weather unfavorable." In our Super-Hibernia, the unfavorable has been construed as the favorable. Some time ago, when we were lost, because we had not recognized our own dominant, when we were still of the unchosen and likely to be more malicious than we now are—because we have noted a steady tolerance

creeping into our attitude—if astronomers are not to blame, but are only correlates to a dominant—we advertised a predicted eclipse that did not occur at all. Now, without any especial feeling, except that of recognition of the fate of all attempted absolutism, we give the instance, noting that, though such an evil thing to orthodoxy, it was orthodoxy that recorded the non-event.

Monthly Notices of the R. A. S., 8-132:

"Remarkable appearances during the total eclipse of the moon on March 19, 1848":

In an extract from a letter from Mr. Forster, of Bruges, it is said that, according to the writer's observations at the time of the predicted total eclipse, the moon shone with about three times the intensity of the mean illumination of an eclipsed lunar disk: that the British Consul, at Ghent, who did not know of the predicted eclipse, had written enquiring as to the "blood-red" color of the moon.

This is not very satisfactory to what used to be our malices. But there follows another letter, from another astronomer, Walkey, who had made observations at Clyst St. Lawrence: that, instead of an eclipse, the moon became—as is printed in italics—"most beautifully illuminated" . . . "rather tinged with a deep red" . . . "the moon being as perfect with light as if there had been no eclipse whatever."

I note that Chambers, in his work upon eclipses, gives Forster's letter in full—and not a mention of Walkey's letter.

There is no attempt in *Monthly Notices* to explain upon the notion of greater distance of the moon, and the earth's shadow falling short, which would make as much trouble for astronomers, if that were not foreseen, as no eclipse at all. Also there is no refuge in saying that virtually never, even in total eclipses, is the moon totally dark—"as perfect with light as if there had been no eclipse whatever." It is said that at the time there had been an aurora borealis, which might have caused the luminosity, without a datum that such an effect, by an aurora, had ever been observed upon the moon.

But single instances—so an observation by Scott, in the Antarctic. The force of this datum lies in my own acceptance, based upon especially looking up this point, that an eclipse nine-tenths of totality has great effect, even though the sky be clouded.

Scott (*Voyage of the Discovery,* vol. II, p. 215) :

“There may have been an eclipse of the sun, Sept. 21, 1903, as the almanac said, but we should, none of us, have liked to swear to the fact.”

This eclipse had been set down at nine-tenths of totality. The sky was overcast at the time.

So it is not only that many eclipses unrecognized by astronomers as eclipses have occurred, but that intermediatism, or impositivism, breaks into their own seemingly regularized eclipses.

Our data of unregularized eclipses, as profound as those that are conventionally—or officially?—recognized, that have occurred relatively to this earth:

In *Notes and Queries* there are several allusions to intense darknesses that have occurred upon this earth, quite as eclipses occur, but that are not referable to any known eclipsing body. Of course there is no suggestion here that these darknesses may have been eclipses. My own acceptance is that if in the nineteenth century anyone had uttered such a thought as that, he’d have felt the blight of a Dominant; that Materialistic Science was a jealous god, excluding, as works of the devil, all utterances against the seemingly uniform, regular, periodic; that to defy him would have brought on— withering by ridicule—shrinking away by publishers—contempt of friends and family—justifiable grounds for divorce—that one who would so defy would feel what unbelievers in relics of saints felt in an earlier age; what befell virgins who forgot to keep fires burning, in a still earlier age—but that, if he’d almost absolutely hold out, just the same—new fixed star reported in *Monthly Notices.* Altogether, the point in Positivism here is that by Dominants and their correlates, quasi-existence strives for the positive state, aggregating, around a nucleus, or dominant, systematized members of a religion, a science, a society—but that “individuals” who do not surrender and submerge may of themselves highly approximate to positiveness —the fixed, the real, the absolute.

In *Notes and Queries,* 2-4-139, there is an account of a darkness in Holland, in the midst of a bright day, so intense and terrifying that many panic-stricken persons lost their lives stumbling into the canals.

Gentleman’s Magazine, 33-414:

A darkness that came upon London, Aug. 19, 1763, “greater than at the great eclipse of 1748.”

However, our preference is not to go so far back for data. For a list of historic “dark days,” see Humboldt, *Cosmos,* 1-120.

Monthly Weather Review, March, 1886-79:

That, according to the *La Crosse Daily Republican,* of March 20, 1886, darkness suddenly settled upon the city of Oshkosh, Wis., at 3 P.M., March 19. In five minutes the darkness equaled that of midnight.

Consternation.

I think that some of us are likely to overdo our own superiority and the absurd fears of the Middle Ages—

Oshkosh.

People in the streets rushing in all directions—horses running away—women and children running into cellars—little modern touch after all: gas meters instead of images and relics of saints.

This darkness, which lasted from eight to ten minutes, occurred in a day that had been "light but cloudy." It passed from west to east, and brightness followed: then came reports from towns to the west of Oshkosh: that the same phenomenon had already occurred there. A "wave of total darkness" had passed from west to east.

Other instances are recorded in the *Monthly Weather Review,* but, as to all of them, we have a sense of being pretty well-eclipsed, ourselves, by the conventional explanation that the obscuring body was only a very dense mass of clouds. But some of the instances are interesting—intense darkness at Memphis, Tenn., for about fifteen minutes, at 10 A.M., Dec. 2, 1904—"We are told that in some quarters a panic prevailed, and that some were shouting and praying and imagining that the end of the world had come". (*M. W. R.,* 32-522.) At Louisville, Ky., March 7, 1911, at about 8 A.M.: duration about half an hour; had been raining moderately, and then hail had fallen. "The intense blackness and general ominous appearance of the storm spread terror throughout the city." (M. *W. R.,*39-345.)

However, this merger between possible eclipses by unknown dark bodies and commonplace terrestrial phenomena is formidable.

As to darknesses that have fallen upon vast areas, conventionality is—smoke from forest fires. In the *U. S. Forest Service Bulletin,* No. 117, F. G. Plummer gives a list of eighteen darknesses that have occurred in the United States and Canada. He is one of the primitives, but I should say that his dogmatism is shaken by vibrations from the new Dominant. His difficulty, which he acknowledges, but which he would have disregarded had he written a decade or so earlier, is the profundity of some of these obscurations. He says that mere smokiness cannot account for such "awe-

inspiring dark days." So he conceives of eddies in the air, concentrating the smoke from forest fires. Then, in the inconsistency or discord of all quasi-intellection that is striving for consistency or harmony, he tells of the vastness of some of these darknesses. Of course Mr. Plummer did not really think upon this subject, but one does feel that he might have approximated higher to real thinking than by speaking of concentration and then listing data of enormous area, or the opposite of circumstances of concentration—because, of his nineteen instances, nine are set down as covering all New England. In quasi-existence, everything generates or is part of its own opposite. Every attempt at peace prepares the way for war; all attempts at justice result in injustice in some other respect: so Mr. Plummer's attempt to bring order into his data, with the explanation of darkness caused by smoke from forest fires, results in such confusion that he ends up by saying that these daytime darknesses have occurred "often with little or no turbidity of the air near the earth's surface"—or with no evidence at all of smoke—except that there is almost always a forest fire somewhere.

However, of the eighteen instances, the only one that I'd bother to contest is the profound darkness in Canada and northern parts of the United States, Nov. 19, 1819—which we have already considered.

Its concomitants:

Lights in the sky;

Fall of a black substance;

Shocks like those of an earthquake.

In this instance, the only available forest fire was one to the south of the Ohio River. For all I know, soot from a very great fire south of the Ohio might fall in Montreal, Canada, and conceivably, by some freak of reflection, light from it might be seen in Montreal, but the earthquake is not assimilable with a forest fire. On the other hand, it will soon be our expression that profound darkness, fall of matter from the sky, lights in the sky, and earthquakes are phenomena of the near approach of other worlds to this world. It is such comprehensiveness, as contrasted with inclusion of a few factors and disregard for the rest, that we call higher approximation to realness—or universalness.

A darkness, of April 17, 1904, at Wimbledon, England (*Symons' Met. Mag.*, 39-69). It came from a smokeless region: no rain, no thunder; lasted 10 minutes; too dark to go "even out in the open."

As to darknesses in Great Britain, one thinks of fogs—but in *Nature,* 25-289, there are some observations by Major J. Herschel, upon an obscuration in London, Jan. 22, 1882, at 10:30 A.M., so great that he could hear persons upon the opposite side of the street, but could not see them—"It was obvious that there was no fog to speak of."

Annual Register, 1857-132:

An account by Charles A. Murray, British Envoy to Persia, of a darkness of May 20, 1857, that came upon Bagdad—"a darkness more intense than ordinary midnight, when neither stars nor moon are visible. . . ." "After a short time the black darkness was succeeded by a red, lurid gloom, such as I never saw in any part of the world."

"Panic seized the whole city."

"A dense volume of red sand fell."

This matter of sand falling seems to suggest conventional explanation enough, or that a simoon, heavily charged with terrestrial sand, had obscured the sun, but Mr. Murray, who says that he had had experience with simoons, gives his opinion that "it cannot have been a simoon."

It is our comprehensiveness now, or this matter of concomitants of darknesses that we are going to capitalize. It is all very complicated and tremendous, and our own treatment can be but impressionistic, but a few of the rudiments of Advanced Seismology we shall now take up—or the four principal phenomena of another world's close approach to this world.

If a large substantial mass, or super-construction, should enter this earth's atmosphere, it is our acceptance that it would sometimes—depending upon velocity—appear luminous or look like a cloud, or like a cloud with a luminous nucleus. Later we shall have an expression upon luminosity—different from the luminosity of incandescence—that comes upon objects falling from the sky, or entering this earth's atmosphere. Now our expression is that worlds have often come close to this earth, and that smaller objects—size of a hay-stack or size of several dozen skyscrapers lumped, have often hurtled through this earth's atmosphere, and have been mistaken for clouds, because they were enveloped in clouds—

Or that around something coming from the intense cold of interplanetary space—that is of some regions: our own suspicion is that other regions are tropical—the moisture of this earth's atmosphere would condense into a cloud-like appearance around it. In *Nature,* 20-121, there is an account by Mr. S. W. Clifton, Collector of Customs, at Freemantle, Western Australia,

sent to the Melbourne Observatory—a clear day—appearance of a small black cloud, moving not very swiftly—bursting into a ball of fire, of the apparent size of the moon—

Or that something with the velocity of an ordinary meteorite could not collect vapor around it, but that slower-moving objects— speed of a railway train, say—may.

The clouds of tornadoes have so often been described as if they were solid objects that I now accept that sometimes they are: that some so-called tornadoes are objects hurtling through this earth's atmosphere, not only generating disturbances by their suctions, but crushing, with their bulk, all things in their way, rising and falling and finally disappearing, demonstrating that gravitation is not the power that the primitives think it is, if an object moving at relatively low velocity be not pulled to this earth, or being so momentarily affected, bounds away.

In Finley's *Reports on the Character of 600 Tornadoes* very suggestive bits of description occur:

"Cloud bounded along the earth like a ball"—

Or that it was no meteorological phenomenon, but something very much like a huge solid ball that was bounding along, crushing and carrying with it everything within its field—

"Cloud bounded along, coming to the earth every eight hundred or one thousand yards."

Here's an interesting bit that I got somewhere else. I offer it as a datum in super-biology, which, however, is a branch of advanced science that I'll not take up, restricting to things indefinitely called "objects"—

"The tornado came wriggling, jumping, whirling like a great green snake, darting out a score of glistening fangs."

Though it's interesting, I think that's sensational, myself. It may be that vast green snakes sometimes rush past this earth, taking a swift bite wherever they can, but, as I say, that's a super-biologic phenomenon. Finley gives dozens of instances of tornado clouds that seem to me more like solid things swathed in clouds, than clouds. He notes that, in the tornado at Americus, Georgia, July 18, 1881, "a strange sulphurous vapor was emitted from the cloud." In many instances, objects, or meteoritic stones, that have come from this earth's externality, have had a sulphurous odor. Why a wind effect should be sulphurous is not clear. That a vast object from external regions should be sulphurous is in line with many data. This phenomenon is

described in the *Monthly Weather Review*, July, 1881, as "a strange sulphurous vapor . . . burning and sickening all who approached close enough to breathe it."

The conventional explanation of tornadoes as wind-effects—which we do not deny in some instances—is so strong in the United States that it is better to look elsewhere for an account of an object that has hurtled through this earth's atmosphere, rising and falling and defying this earth's gravitation.

Nature, 7-112:

That, according to a correspondent to the *Birmingham Morning News*, the people living near King's Sutton, Banbury, saw, about one o'clock, Dec. 7, 1872, something like a haycock hurtling through the air. Like a meteor it was accompanied by fire and a dense smoke and made a noise like that of a railway train. "It was sometimes high in the air and sometimes near the ground." The effect was tornado-like: trees and walls were knocked down. It's a late day now to try to verify this story, but a list is given of persons whose property was injured. We are told that this thing then disappeared "all at once."

These are the smaller objects, which may be derailed railway trains or big green snakes, for all I know—but our expression upon approach to this earth by vast dark bodies—

That likely they'd be made luminous: would envelop in clouds, perhaps, or would have their own clouds—

But that they'd quake, and that they'd affect this earth with quakes—

And that then would occur a fall of matter from such a world, or rise of matter from this earth to a nearby world, or both fall and rise, or exchange of matter—process known to Advanced Seismology as celestio-metathesis —

Except that—if matter from some other world—and it would be like someone to get it into his head that we absolutely deny gravitation, just because we cannot accept orthodox dogmas—except that, if matter from another world, filling the sky of this earth, generally, as to a hemisphere, or locally, should be attracted to this earth, it would seem thinkable that the whole thing should drop here, and not merely its surface-materials.

Objects upon a ship's bottom. From time to time they drop to the bottom of the ocean. The ship does not.

Or, like our acceptance upon dripping from aerial ice-fields, we think of only a part of a nearby world succumbing, except in being caught in

suspension, to this earth's gravitation, and surface-materials falling from that part—

Explain or express or accept, and what does it matter? Our attitude is:

Here are the data.

See for yourself.

What does it matter what my notions may be?

Here are the data.

But think for yourself, or think for myself, all mixed up we must be. A long time must go by before we can know Florida from Long Island. So we've had data of fishes that have fallen from our now established and respectabilized Super-Sargasso Sea—which we've almost forgotten, it's now so respectable—but we shall have data of fishes that have fallen during earthquakes. These we accept were dragged down from ponds or other worlds that have been quaked, when only a few miles away, by this earth, some other world also quaking this earth.

In a way, or in its principle, our subject is orthodox enough. Only grant proximity of other worlds—which, however, will not be a matter of granting, but will be a matter of data—and one conventionally conceives of their surfaces quaked—even of a whole lake full of fishes being quaked and dragged down from one of them. The lake full of fishes may cause a little pain to some minds, but the fall of sand and stones is pleasantly enough thought of. More scientific persons, or more faithful hypnotics than we, have taken up this subject, unpainfully, relatively to the moon. For instance, Perrey has gone over 15,000 records of earthquakes, and he has correlated many with proximities of the moon, or has attributed many to the pull of the moon when nearest this earth. Also there is a paper upon this subject in the *Proc. Roy. Soc. of Cornwall*, 1845. Or, theoretically, when at its closest to this earth, the moon quakes the face of this earth, and is itself quaked—but does not itself fall to this earth. As to showers of matter that may have come from the moon at such times—one can go over old records and find what one pleases.

That is what we now shall do.

Our expressions are for acceptance only.

Our data:

We take them from four classes of phenomena that have preceded or accompanied earthquakes:

Unusual clouds, darkness profound, luminous appearances in the sky, and falls of substances and objects whether commonly called meteoritic or not.

Not one of these occurrences fits in with principles of primitive, or primary, seismology, and every one of them is a datum of a quaked body passing close to this earth or suspended over it. To the primitives there is not a reason in the world why a convulsion of this earth's surface should be accompanied by unusual sights in the sky, by darkness, or by the fall of substances or objects from the sky. As to phenomena like these, or storms, preceding earthquakes, the irreconcilability is still greater.

It was before 1860 that Perrey made his great compilation. We take most of our data from lists compiled long ago. Only the safe and unpainful have been published in recent years—at least in ambitious, voluminous form. The restraining hand of the "System"— as we call it, whether it has any real existence or not—is tight upon the sciences of today. The uncanniest aspect of our quasi-existence that I know of is that everything that seems to have one identity has also as high a seeming of everything else. In this oneness of allness, or continuity, the protecting hand strangles; the parental stifles; love is inseparable from phenomena of hate. There is only Continuity—that is in quasi-existence. *Nature,* at least in its correspondents' columns, still evades this protective strangulation, and the *Monthly Weather Review* is still a rich field of unfaithful observation: but, in looking over other long-established periodicals, I have noted their glimmers of quasi-individuality fade gradually, after about 1860, and the surrender of their attempted identities to a higher attempted organization. Some of them, expressing Intermediateness-wide endeavor to localize the universal, or to localize self, soul, identity, entity—or positiveness or realness—held out until as far as 1880; traces findable up to 1890—and then, expressing the universal process—except that here and there in the world's history there may have been successful approximations to positiveness by "individuals"—who only then became individuals and attained to selves or souls of their own—surrendered, submitted, became parts of a higher organization's attempt to individualize or systematize into a complete thing, or to localize the universal or the attributes of the universal. After the death of Richard Proctor, whose occasional illiberalities I'd not like to emphasize too much, all succeeding volumes of *Knowledge* have yielded scarcely an unconventionality. Note the great number of times that the *American Journal of Science* and the *Report of the British Association* are quoted:

note that, after, say, 1885, they're scarcely mentioned in these inspired but illicit pages—as by hypnosis and inertia, we keep on saying.

About 1880.

Throttle and disregard.

But the coercion could not be positive, and many of the excommunicated continued to creep in; or, even to this day, some of the strangled are faintly breathing.

Some of our data have been hard to find. We could tell stories of great labor and fruitless quests that would, though perhaps imperceptibly, stir the sympathy of a Mr. Symons. But, in this matter of concurrence of earthquakes with aerial phenomena, which are as unassociable with earthquakes, if internally caused, as falls of sand on convulsed small boys full of sour apples, the abundance of so-called evidence is so great that we can only sketchily go over the data, beginning with Robert Mallet's Catalogue (*Rept. Brit. Assoc.*, 1852), omitting some extraordinary instances, because they occurred before the eighteenth century:

Earthquake "preceded" by a violent tempest, England, Jan. 8, 1704 —"preceded" by a brilliant meteor, Switzerland, Nov. 4, 1704— "luminous cloud, moving at high velocity, disappearing behind the horizon," Florence, Dec. 9, 1731—"thick mists in the air, through which a dim light was seen: several weeks before the shock, globes of light had been seen in the air," Swabia, May 22, 1732—rain of earth, Carpentras, France, Oct. 18, 1737—a black cloud, London, March 19, 1750—violent storm and a strange star of octagonal shape, Slavange, Norway, April 15, 1752—balls of fire from a streak in the sky, Augermannland, 1752—numerous meteorites, Lisbon, Oct. 15, 1755—"terrible tempests" over and over—"falls of hail" and "brilliant meteors," instance after instance—"an immense globe," Switzerland, Nov. 2, 1761—oblong, sulphurous cloud, Germany, April, 1767—extraordinary mass of vapor, Boulogne, April, 1780—heavens obscured by a dark mist, Grenada, Aug. 7, 1804—"strange, howling noises in the air, and large spots obscuring the sun," Palermo, Italy, April 16, 1817 —"luminous meteor moving in the same direction as the shock," Naples, Nov. 22, 1821—fire ball appearing in the sky: apparent size of the moon, Thuringerwald, Nov. 29, 1831.

And, unless you be polarized by the New Dominant, which is calling for recognition of multiplicities of external things, as a Dominant, dawning new over Europe in 1492, called for recognition of terrestrial externality to

Europe—unless you have this contact with the new, you have no affinity for these data—beans that drop from a magnet—irreconcilables that glide from the mind of a Thomson—

Or my own acceptance that we do not really think at all; that we correlate around super-magnets that I call Dominants—a Spiritual Dominant in one age, and responsively to it up spring monasteries, and the stake and the cross are its symbols: a Materialist Dominant, and up spring laboratories, and microscopes and telescopes and crucibles are its ikons—that we're nothing but iron filings relatively to a succession of magnets that displace preceding magnets.

With no soul of your own, and with no soul of my own—except that some day some of us may no longer be Intermediatisms, but may hold out against the cosmos that once upon a time thousands of fishes were cast from one pail of water—we have psycho-valency for these data, if we're obedient slaves to the New Dominant, and repulsion to them, if we're mere correlates to the Old Dominant. I'm a soulless and selfless correlate to the New Dominant, myself: I see what I have to see. The only inducement I can hold out, in my attempt to rake up disciples, is that some day the New will be fashionable: the new correlates will sneer at the old correlates. After all, there is some inducement to that—and I'm not altogether sure it's desirable to end up as a fixed star.

As a correlate to the New Dominant, I am very much impressed with some of these data—the luminous object that moved in the same direction as an earthquake—it seems very acceptable that a quake followed this thing as it passed near this earth's surface. The streak that was seen in the sky—or only a streak that was visible of another world—and objects, or meteorites, that were shaken down from it. The quake at Carpentras, France: and that, above Carpentras, was a smaller world, more violently quaked, so that earth was shaken down from it.

But I like best the super-wolves that were seen to cross the sun during the earthquake at Palermo.

They howled.

Or the loves of the worlds. The. call they feel for one another. They try to move closer and howl when they get there.

The howls of the planets.

I have discovered a new unintelligibility.

In the *Edinburgh New Philosophical Journal*—have to go away back to 1841—days of less efficient strangulation—Sir David Milne lists phenomena of quakes in Great Britain. I pick out a few that indicate to me that other worlds were near this earth's surface:

Violent storm before a shock of 1703—ball of fire "preceding," 1750—a large ball of fire seen upon day following a quake, 1755— "uncommon phenomenon in the air: a large luminous body, bent like a crescent, which stretched itself over the heavens, 1816—vast ball of fire, 1750—black rains and black snows, 1755—numerous instances of upward projection—or upward attraction?—during quakes—"preceded by a cloud, very black and lowering," 1795— fall of black powder, preceding a quake, by six hours, 1837.

Some of these instances seem to me to be very striking—a smaller world: it is greatly racked by the attraction of this earth—black substance is torn down from it—not until six hours later, after an approach still closer, does this earth suffer perturbation. As to the extraordinary spectacle of a thing, world, super-construction, that was seen in the sky, in 1816, I have not yet been able to find out more. I think that here our acceptance is relatively sound: that this occurrence was tremendously of more importance than such occurrence as, say, transits of Venus, upon which hundreds of papers have been written—that not another mention have I found, though I have not looked so especially as I shall look for more data—that all but undetailed record of this occurrence was suppressed.

Altogether we have considerable agreement here between data of vast masses that do not fall to this earth, but from which substances fall, and data of fields of ice from which ice may not fall, but from which water may drip. I'm beginning to modify: that, at a distance from this earth, gravitation has more effect than we have supposed, though less effect than the dogmatists suppose and "prove." I'm coming out stronger for the acceptance of a Neutral Zone—that this earth, like other magnets, has a neutral zone, in which is the Super-Sargasso Sea, and in which other worlds may be buoyed up, though projecting parts may be subject to this earth's attraction—

But my preference:

Here are the data.

I now have one of the most interesting of the new correlates. I think I should have brought it in before, but, whether out of place here, because not

accompanied by earthquake, or not, we'll have it. I offer it as an instance of an eclipse, by a vast, dark body, that has been seen and reported by an astronomer. The astronomer is M. Lias: the phenomenon was seen by him, at Pernambuco, April 11, 1860.

Comptes Rendus, 50-1197:

It was about noon—sky cloudless—suddenly the light of the sun was diminished. The darkness increased, and, to illustrate its intensity, we are told that the planet Venus shone brilliant. But Venus was of low visibility at this time. The observation that burns incense to the New Dominant is:

That around the sun appeared a corona.

There are many other instances that indicate proximity of other world's during earthquakes. I note a few—quake and an object in the sky, called "a large, luminous meteor" (*Quar. Jour. Roy. Inst.,* 5-132); luminous body in the sky, earthquake, and fall of sand, Italy, Feb. 12 and 13, 1870 (*La Science Pour Tous,* 15-159); many reports upon luminous object in the sky and earthquake, Connecticut, Feb. 27, 1883 (*Monthly Weather Review,* February, 1883); luminous object, or meteor, in the sky, fall of stones from the sky, and earthquake, Italy, Jan. 20, 1891 (L*'Astronomie;* 1891-154); earthquake and prodigious number of luminous bodies, or globes, in the air, Boulogne, France, June 7, 1779 (Sestier, *"La Foudre,"* 1-169); earthquake at Manila, 1863, and "curious luminous appearance in the sky" (Ponton, *Earthquakes,* p. 124).

The most notable appearance of fishes during an earthquake is that of Riobamba. Humboldt sketched one of them, and it's an uncanny-looking thing. Thousands of them appeared upon the ground during this tremendous earthquake. Humboldt says that they were cast up from subterranean sources. I think not myself, and have data for thinking not, but there'd be such a row arguing back and forth that it's simpler to consider a clearer instance of the fall of living fishes from the sky, during an earthquake. I can't quite accept, myself, whether a large lake, and all the fishes in it, was torn down from some other world, or a lake in the Super-Sargasso Sea, distracted between two pulling worlds, was dragged down to this earth—

Here are the data:

La Science Pour Tous, 6-191:

Feb. 16, 1861. An earthquake at Singapore. Then came an extraordinary downpour of rain—or as much water as any good-sized lake would consist of. For three days this rain or this fall of water came down in torrents. In

pools on the ground, formed by this deluge, great numbers of fishes were found. The writer says that he had, himself, seen nothing but water fall from the sky. Whether I'm emphasizing what a deluge it was or not, he says that so terrific had been the downpour that he had not been able to see three steps away from him. The natives said that the fishes had fallen from the sky. Three days later the pools dried up and many dead fishes were found, but, in the first place—though that's an expression for which we have an instinctive dislike—the fishes had been active and uninjured. Then follows material for another of our little studies in the phenomena of disregard. A psycho-tropism here is mechanically to take pen in hand and mechanically write that fishes found on the ground after a heavy rainfall came from overflowing streams. The writer of the account says that some of the fishes had been found in his courtyard, which was surrounded by high walls—paying no attention to this, a correspondent (*La Science Pour Tous,* 6-317) explains that in the heavy rain a body of water had probably overflowed, carrying fishes with it. We are told by the first writer that these fishes of Singapore were of a species that was very abundant near Singapore. So I think, myself, that a whole lakeful of them had been shaken down from the Super-Sargasso Sea, under the circumstances we have thought of. However, if appearance of strange fishes after an earthquake be more pleasing in the sight, or to the nostrils, of the New Dominant, we faithfully and piously supply that incense— An account of the occurrence at Singapore was read by M. de Castelnau, before the French Academy. M. de Castelnau recalled that, upon a former occasion, he had submitted to the Academy the circumstance that fishes of a new species had appeared at the Cape of Good Hope, after an earthquake.

It seems proper, and it will give luster to the new orthodoxy, now to have an instance in which, not merely quake and fall of rocks or meteorites, or quake and either eclipse or luminous appearances in the sky have occurred, but in which are combined all the phenomena, one or more of which, when accompanying earthquake, indicate, in our acceptance, the proximity of another world. This time a longer duration is indicated than in other instances.

In the *Canadian Institute Proceedings,* 2-7-198, there is an account, by the Deputy Commissioner at Dhurmsalla, of the extraordinary Dhurmsalla meteorite—coated with ice. But the combination of events related by him is still more extraordinary:

That within a few months of the fall of this meteorite there had been a fall of live fishes at Benares, a shower of red substance at Furruckabad, a dark spot observed on the disk of the sun, an earthquake, “an unnatural darkness of some duration,” and a luminous appearance in the sky that looked like an aurora borealis—

But there’s more to this climax:

We are introduced to a new order of phenomena:

Visitors.

The Deputy Commissioner writes that, in the evening, after the fall of the Dhurmsalla meteorite, or mass of stone covered with ice, he saw lights. Some of them were not very high. They appeared and went out and reappeared. I have read many accounts of the Dhurmsalla meteorite—July 28, 1860—but never in any other of them a mention of this new correlate—something as out of place in the nineteenth century as would have been an aeroplane—the invention of which would not, in our acceptance, have been permitted, in the nineteenth century, though adumbrations to it were permitted. This writer says that the lights moved like fire balloons, but:

“I am sure that they were neither fire balloons, lanterns, nor bonfires, or any other thing of that sort, but bona fide lights in the heavens.”

It’s a subject for which we shall have to have a separate expression—trespassers upon territory to which something else has a legal right—perhaps someone lost a rock, and he and his friends came down looking for it, in the evening—or secret agents, or emissaries, who had an appointment with certain esoteric ones near Dhurmsalla—things or beings coming down to explore, and unable to stay down long—

In a way, another strange occurrence during an earthquake is suggested. The ancient Chinese tradition—the marks like hoof marks in the ground. We have thought—with a low degree of acceptance—of another world that may be in secret communication with certain esoteric ones of this earth’s inhabitants—and of messages in symbols like hoof marks that are sent to some receptor, or special hill, upon this earth—and of messages that at times miscarry.

This other world comes close to this world—there are quakes— but advantage of proximity is taken to send a message—the message, designed for a receptor in India, perhaps, or in Central Europe, miscarries all the way to England—marks like the marks of the Chinese tradition are found upon a beach, in Cornwall, after an earthquake—

Phil. Trans., 50-500:

After the quake of July 15, 1757, upon the sands of Penzance, Cornwall, in an area of more than 100 square yards, were found marks like hoof prints, except that they were not crescentic. We feel a similarity, but note an arbitrary disregard of our own, this time. It seems to us that marks described as "little cones surrounded by basins of equal diameter" would be like hoof prints, if hoofs printed complete circles. Other disregards are that there were black specks on the tops of cones, as if something, perhaps gaseous, had issued from them; that from one of these formations came a gush of water as thick as a man's wrist. Of course the opening of springs is common in earthquakes—but we suspect, myself, that the Negative Absolute is compelling us to put in this datum and its disorders.

There's another matter in which the Negative Absolute seems to work against us. Though to super-chemistry, we have introduced the principle of celestio-metathesis, we have no good data of exchange of substances during proximities. The data are all of falls and not of upward translations. Of course upward impulses are common during earthquakes, but I haven't a datum upon a tree or a fish or a brick or a man that ever did go up and stay up and that never did come down again. Our classic of the horse and barn occurred in what was called a whirlwind.

It is said that, in an earthquake in Calabria, paving stones shot up far in the air.

The writer doesn't specifically say that they came down again, but something seems to tell me they did.

The corpses of Riobamba.

Humboldt reported that, in the quake of Riobamba, "bodies were torn upward from graves"; that "the vertical motion was so strong that bodies were tossed several hundred feet in the air."

I explain.

I explain that, if in the center of greatest violence of an earthquake, anything ever has gone up, and has kept on going up, the thoughts of the nearest observers were very likely upon other subjects.

The quay of Lisbon.

We are told that it went down.

A vast throng of persons ran to the quay for refuge. The city of Lisbon was in profound darkness. The quay and all the people on it disappeared. If

it and they went down—not a single corpse, not a shred of clothing, not a plank of the quay, nor so much as a splinter of it ever floated to the surface.

18

THE New Dominant.

I mean “primarily” all that opposes Exclusionism—

That Development or Progress or Evolution is Attempt to Positivize, and is a mechanism by which a positive existence is recruited—that what we call existence is a womb of infinitude, and is itself only incubatory—that eventually all attempts are broken down by the falsely excluded. Subjectively, the breaking down is aided by our own sense of false and narrow limitations. So the classic and academic artists wrought positivist paintings, and expressed the only ideal that I am conscious of, though we so often hear of “ideals” instead of different manifestations, artistically, scientifically, theologically, politically, of the One Ideal. They sought to satisfy, in its artistic aspect, cosmic craving for unity or completeness, sometimes called harmony, called beauty in some aspects. By disregard they sought completeness. But the light-effects that they disregarded, and their narrow confinement to standardized subjects brought on the revolt of the Impressionists. So the Puritans tried to systematize, and they disregarded physical needs, or vices, or relaxations: they were invaded and overthrown when their narrowness became obvious and intolerable. All things strive for positiveness, for themselves, or for quasi-systems of which they are parts. Formality and the mathematic, the regular and the uniform are aspects of the positive state—but the Positive is the Universal—so all attempted positiveness that seems to satisfy in the aspects of formality and regularity, sooner or later disqualifies in the aspect of wideness or universalness. So there is revolt against the science of today, because the formulated utterances that were regarded as final truths in a past generation, are now seen to be insufficiencies. Every pronouncement that has opposed our own acceptances has been found to be a composition like any academic painting: something that is arbitrarily cut off from relations with environment, or framed off from interfering and disturbing data, or outlined with disregards. Our own attempt has been to take in the included, but also to take in the excluded into wider expressions. We accept, however, that for

every one of our expressions there are irreconcilables somewhere—that final utterance would include all things. However, of such is the gossip of angels. The final is unutterable in quasi-existence, where to think is to include but also to exclude, or be not final. If we admit that for every opinion we have expressed, there must somewhere be an irreconcilable, we are Intermediatists and not positivists; not even higher positivists. Of course it may be that some day we shall systematize and dogmatize and refuse to think of anything that we may be accused of disregarding, and believe instead of merely accepting: then, if we could have a wider system, which would acknowledge no irreconcilables we'd be higher positivists. So long as we only accept, we are not higher positivists, but our feeling is that the New Dominant, even though we have thought of it only as another enslavement, will be the nucleus for higher positivism—and that it will be the means of elevating into infinitude a new batch of fixed stars—until, as a recruiting instrument, it, too, will play out, and will give way to some new medium for generating absoluteness. It is our acceptance that all astronomers of today have lost their souls, or, rather, all chance of attaining Entity, but that Copernicus and Kepler and Galileo and Newton, and, conceivably, Leverrier are now fixed stars. Some day I shall attempt to identify them. In all this, I think we're quite a Moses. We point out the Promised Land, but, unless we be cured of our Intermediatism, will never be reported in *Monthly Notices*, ourself.

In our acceptance, Dominants, in their succession, displace preceding Dominants not only because they are more nearly positive, but because the old Dominants, as recruiting mediums, play out. Our expression is that the New Dominant, of Wider Inclusions, is now manifesting throughout the world, and that the old Exclusionism is everywhere breaking down. In physics Exclusionism is breaking down by its own researches in radium, for instance, and in its speculations upon electrons, or its merging away into metaphysics, and by the desertion that has been going on for many years, by such men as Gurney, Crookes, Wallace, Flammarion, Lodge, to formerly disregarded phenomena—no longer called "spiritualism" but now "psychic research." Biology is in chaos: conventional Darwinites mixed up with mutationists and orthogenesists and followers of Wisemann, who take from Darwinism one of its pseudo-bases, and nevertheless try to reconcile their heresies with orthodoxy. The painters are metaphysicians and psychologists. The breaking down of Exclusionism in China and Japan and in the United

States has astonished History. The science of astronomy is going downward so that, though Pickering, for instance, did speculate upon a Trans-Neptunian planet, and Lowell did try to have accepted heretical ideas as to marks on Mars, attention is now minutely focused upon such technicalities as variations in shades of Jupiter's fourth satellite. I think that, in general acceptance, over-refinement indicates decadence.

I think that the stronghold of Inclusionism is in aeronautics. I think that the stronghold of the Old Dominant, when it was new, was in the invention of the telescope. Or that coincidentally with the breakdown of Exclusionism appears the means of finding out— whether there are vast aerial fields of ice and floating lakes full of frogs and fishes or not—where carved stones and black substances and great quantities of vegetable matter and flesh, which may be dragons' flesh, come from—whether there are inter-planetary trade routes and vast areas devastated by Super-Tamerlanes—whether sometimes there are visitors to this earth—who might be pursued and captured and questioned.

19

I HAVE industriously sought data for an expression upon birds, but the prospecting has not been very quasi-satisfactory. I think I rather emphasize our industriousness, because a charge likely to be brought against the attitude of Acceptance is that one who only accepts must be one of languid interest and little application of energy. It doesn't seem to work out: we are very industrious. I suggest to some of our disciples that they look into the matter of messages upon pigeons, of course attributed to earthly owners, but said to be undecipherable. I'd do it, ourselves, only that would be selfish. That's more of the Intermediatism that will keep us out of the firmament: Positivism is absolute egoism. But look back in the time of Andrée's Polar Expedition. Pigeons that would have no publicity ordinarily, were often reported at that time.

In the *Zoologist*, 3-18-21, is recorded an instance of a bird (puffin) that had fallen to the ground with a fractured head. Interesting, but mere speculation—but what solid object, high in the air, had that bird struck against?

Tremendous red rain in France, Oct. 16 and 17, 1846; great storm at the time, and red rain supposed to have been colored by matter swept up from this earth's surface, and then precipitated (*Comptes Rendus*, 23-832). But in *Comptes Rendus*, 24-625, the description of this red rain differs from one's impression of red, sandy or muddy water. It is said that this rain was so vividly red and so blood-like that many persons in France were terrified. Two analyses are given (*Comptes Rendus*, 24-812). One chemist notes a great quantity of corpuscles—whether blood-like corpuscles or not —in the matter. The other chemist sets down organic matter at 35 per cent. It may be that an inter-planetary dragon had been slain somewhere, or that this red fluid, in which were many corpuscles, came from something not altogether pleasant to contemplate, about the size of the Catskill Mountains, perhaps—but the present datum is that with this substance, larks, quail, ducks, and water hens, some of them alive, fell at Lyons and Grenoble and other places.

I have notes upon other birds that have fallen from the sky, but unaccompanied by the red rain that makes the fall of birds in France peculiar, and very peculiar, if it be accepted that the red substance was extra-mundane. The other notes are upon birds that have fallen from the sky, in the midst of storms, or of exhausted, but living, birds, falling not far from a storm-area. But now we shall have an instance for which I can find no parallel: fall of dead birds, from a clear sky, far-distant from any storm to which they could be attributed—so remote from any discoverable storm that—

My own notion is that, in the summer of 1896, something, or some beings, came as near to this earth as they could, upon a hunting expedition; that, in the summer of 1896, an expedition of super-scientists passed over this earth, and let down a dragnet—and what would it catch, sweeping through the air, supposing it to have reached not quite to this earth?

In the *Monthly Weather Review*, May, 1917, W. L. McAtee quotes from the Baton Rouge correspondence to the *Philadelphia Times:*

That, in the summer of 1896, into the streets of Baton Rouge, La., and from a "clear sky," fell hundreds of dead birds. There were wild ducks and cat birds, woodpeckers, and "many birds of strange plumage," some of them resembling canaries.

Usually one does not have to look very far from any place to learn of a storm. But the best that could be done in this instance was to say:

"There had been a storm on the coast of Florida."

And, unless he have psycho-chemic repulsion for the explanation, the reader feels only momentary astonishment that dead birds from a storm in Florida should fall from an unstormy sky in Louisiana, and with his intellect greased like the plumage of a wild duck, the datum then drops off.

Our greasy, shiny brains. That they may be of some use after all: that other modes of existence place a high value upon them as lubricants; that we're hunted for them; a hunting expedition to this earth—the newspapers report a tornado.

If from a clear sky, or a sky in which there were no driven clouds, or other evidences of still-continuing wind-power—or, if from a storm in Florida, it could be accepted that hundreds of birds had fallen far away, in Louisiana, I conceive, conventionally, of heavier objects having fallen in Alabama, say, and of the fall of still heavier objects still nearer the origin in Florida.

The sources of information of the Weather Bureau are widespread.

It has no records of such falls.

So a dragnet that was let down from above somewhere—

Or something that I learned from the more scientific of the investigators of psychic phenomena:

The reader begins their works with prejudice against telepathy and everything else of psychic phenomena. The writers deny spirit-communication, and say that the seeming data are data of "only telepathy." Astonishing instances of seeming clairvoyance—"only telepathy." After a while the reader finds himself agreeing that it's only telepathy—which, at first, had been intolerable to him.

So maybe, in 1896, a super-dragnet did not sweep through this earth's atmosphere, gathering up all the birds within its field, the meshes then suddenly breaking—

Or that the birds of Baton Rouge were only from the Super-Sargasso Sea —

Upon which we shall have another expression. We thought we'd settled that, and we thought we'd establish that, but nothing's ever settled, and nothing's ever established, in a real sense, if, in a real sense, there is nothing in quasiness.

I suppose there had been a storm somewhere, the storm in Florida, perhaps, and many birds had been swept upward into the Super-Sargasso Sea. It has frigid regions and it has tropical regions—that birds of diverse species had been swept upward, into an icy region, where, huddling together for warmth, they had died. Then, later, they had been dislodged—meteor coming along—boat—bicycle— dragon—don't know what did come along—something dislodged them.

So leaves of trees, carried up there in whirlwinds, staying there years, ages, perhaps only a few months, but then falling to this earth at an unseasonable time for dead leaves—fishes carried up there, some of them dying and drying, some of them living in volumes of water that are in abundance up there, or that fall sometimes in the deluges that we call "cloudbursts."

The astronomers won't think kindly of us, and we haven't done anything to endear ourselves to the meteorologists—but we're weak and mawkish Intermediatists—several times we've tried to get the aeronauts with us—extraordinary things up there: things that curators of museums would give

up all hope of ever being fixed stars, to obtain: things left over from whirlwinds of the time of the Pharaohs, perhaps: or that Elijah did go up in the sky in something like a chariot, and may not be Vega, after all, and that there may be a wheel or so left of whatever he went up in. We basely suggest that it would bring a high price—but sell soon, because after a while there'd be thousands of them hawked around—

We weakly drop a hint to the aeronauts.

In the *Scientific American*, 33-197, there is an account of some hay that fell from the sky. From the circumstances we incline to accept that this hay went up, in a whirlwind, from this earth, in the first place, reached the Super-Sargasso Sea, and remained there a long time before falling. An interesting point in this expression is the usual attribution to a local and coinciding whirlwind, and identification of it—and then data that make that local whirlwind unacceptable—

That, upon July 27, 1875, small masses of damp hay had fallen at Monkstown, Ireland. In the *Dublin Daily Express*, Dr. J. W. Moore had explained: he had found a nearby whirlwind, to the south of Monkstown, that coincided. But, according to the *Scientific American*, a similar fall had occurred near Wrexham, England, two days before.

In November, 1918, I made some studies upon light objects thrown into the air. Armistice-day. I suppose I should have been more emotionally occupied, but I made notes upon torn-up papers thrown high in the air from windows of office buildings. Scraps of paper did stay together for a while. Several minutes, sometimes.

Cosmos, 3-4-574:

That, upon the 10th of April, 1869, at Autriche (Indre-et-Loire) a great number of oak leaves—enormous segregation of them—fell from the sky. Very calm day. So little wind that the leaves fell almost vertically. Fall lasted about ten minutes.

Flammarion, in *The Atmosphere*, p. 412, tells this story.

He has to find a storm.

He does find a squall—but it had occurred upon April 3rd.

Flammarion's two incredibilities are—that leaves could remain a week in the air: that they could stay together a week in the air.

Think of some of your own observations upon papers thrown from an aeroplane.

Our one incredibility:

That these leaves had been whirled up six months before, when they were common on the ground, and had been sustained, of course not in the air, but in a region gravitationally inert; and had been precipitated by the disturbances of April rains.

I have no records of leaves that have so fallen from the sky in October or November, the season when one might expect dead leaves to be raised from one place and precipitated somewhere else. I emphasize that this occurred in April.

La Nature, 1889-2-94:

That, upon April 19, 1889, dried leaves, of different species, oak, elm, etc., fell from the sky. This day, too, was a calm day. The fall was tremendous. The leaves were seen to fall fifteen minutes, but, judging from the quantity on the ground, it is the writer's opinion that they had already been falling half an hour. I think that the geyser of corpses that sprang from Riobamba toward the sky must have been an interesting sight. If I were a painter, I'd like that subject. But this cataract of dried leaves, too, is a study in the rhythms of the dead. In this datum, the point most agreeable to us is the very point that the writer in *La Nature* emphasizes. Windlessness. He says that the surface of the Loire was "absolutely smooth." The river was strewn with leaves as far as he could see.

L'Astronomie, 1894-194:

That, upon the 7th of April, 1894, dried leaves fell at Clairvaux and Outre-Aube, France. The fall is described as prodigious. Half an hour. Then, upon the 11th, a fall of dried leaves occurred at Pontcarré.

It is in this recurrence that we found some of our opposition to the conventional explanation. The Editor (Flammarion) explains. He says that the leaves had been caught up in a cyclone which had expended its force; that the heavier leaves had fallen first. We think that that was all right for 1894, and that it was quite good enough for 1894. But, in these more exacting days, we want to know how wind-power insufficient to hold some leaves in the air could sustain others four days.

The factors in this expression are unseasonableness, not for dried leaves, but for prodigious numbers of dried leaves; direct fall, windlessness, month of April, and localization in France. The factor of localization is interesting. Not a note have I upon fall of leaves from the sky, except these notes. Were the conventional explanation, or "old correlate" acceptable, it would seem that similar occurrences in other regions should be as frequent as in France.

The indication is that there may be quasi-permanent undulations in the Super-Sargasso Sea, or a pronounced inclination toward France—

Inspiration:

That there may be a nearby world complementary to this world, where autumn occurs at the time that is springtime here.

Let some disciple have that.

But there may be a dip toward France, so that leaves that are borne high there, are more likely to be held in suspension than high-flying leaves elsewhere. Some other time I shall take up Super-geography, and be guilty of charts. I think, now, that the Super-Sargasso Sea is an oblique belt, with changing ramifications, over Great Britain, France, Italy, and on to India. Relatively to the United States I am not very clear, but think especially of the Southern States.

The preponderance of our data indicates frigid regions aloft. Nevertheless such phenomena as putrefaction have occurred often enough to make super-tropical regions, also, acceptable. We shall have one more datum upon the Super-Sargasso Sea. It seems to me that, by this time, our requirements of support and reinforcement and agreement have been quite as rigorous for acceptance as ever for belief: at least for full acceptance. By virtue of mere acceptance, we may, in some later book, deny the Super-Sargasso Sea, and find that our data relate to some other complementary world instead —or the moon—and have abundant data for accepting that the moon is not more than twenty or thirty miles away. However, the Super-Sargasso Sea functions very well as a nucleus around which to gather data that oppose Exclusionism. That is our main motive: to oppose Exclusionism.

Or our agreement with cosmic processes. The climax of our general expression upon the Super-Sargasso Sea. Coincidentally appears something else that may overthrow it later.

Notes and Queries, 8-12-228:

That in the province of Macerata, Italy (summer of 1897?) an immense number of small, blood-colored clouds covered the sky. About an hour later a storm broke, and myriad seeds fell to the ground. It is said that they were identified as products of a tree found only in Central Africa and the Antilles.

If—in terms of conventional reasoning—these seeds had been high in the air, they had been in a cold region. But it is our acceptance that these seeds had, for a considerable time, been in a warm region, and for a time longer than is attributable to suspension by wind-power:

“It is said that a great number of the seeds were in the first stage of germination.”

20

THE New Dominant.
Inclusionism.
In it we have a pseudo-standard.

We have a datum, and we give it an interpretation, in accordance with our pseudo-standard. At present we have not the delusions of Absolutism that may have translated some of the positivists of the nineteenth century to heaven. We are Intermediatists—but feel a lurking suspicion that we may some day solidify and dogmatize and illiberalize into higher positivists. At present we do not ask whether something be reasonable or preposterous, because we recognize that by reasonableness and preposterousness are meant agreement and disagreement with a standard—which must be a delusion —though not absolutely, of course—and must some day be displaced by a more advanced quasi-delusion. Scientists in the past have taken the positivist attitude—is this or that reasonable or unreasonable? Analyze them and we find that they meant relatively to a standard, such as Newtonism, Daltonism, Darwinism, or Lyellism. But they have written and spoken and thought as if they could mean real reasonableness and real unreasonableness.

So our pseudo-standard is Inclusionism, and, if a datum be a correlate to a more widely inclusive outlook as to this earth and its externality and relations with externality, its harmony with Inclusionism admits it. Such was the process, and such was the requirement for admission in the days of the Old Dominant: our difference is in underlying Intermediatism, or consciousness that though we're more nearly real, we and our standards are only quasi—

Or that all things—in our intermediate state—are phantoms in a super-mind in a dreaming state—but striving to awaken to realness.

Though in some respects our own Intermediatism is unsatisfactory, our underlying feeling is—

That in a dreaming mind awakening is accelerated—if phantoms in that mind know that they're only phantoms in a dream. Of course, they too are

quasi, or—but in a relative sense—they have an essence of what is called realness. They are derived from experience or from senes-relations, even though grotesque distortions. It seems acceptable that a table that is seen when one is awake is more nearly real than a dreamed table, which, with fifteen or twenty legs, chases one.

So now, in the twentieth century, with a change of terms, and a change in underlying consciousness, our attitude toward the New Dominant is the attitude of the scientists of the nineteenth century to the Old Dominant. We do not insist that our data and interpretations shall be as shocking, grotesque, evil, ridiculous, childish, insincere, laughable, ignorant to nineteenth-centuryites as were their data and interpretations to the medieval-minded. We ask only whether data and interpretations correlate. If they do, they are acceptable, perhaps only for a short time, or as nuclei, or scaffolding, or preliminary sketches, or as gropings and tentativenesses. Later, of course, when we cool off and harden and radiate into space most of our present mobility, which expresses in modesty and plasticity, we shall acknowledge no scaffoldings, gropings or tentativenesses, but think we utter absolute facts. A point in Intermediatism here is opposed to most current speculations upon Development. Usually one thinks of the spiritual as higher than the material, but, in our acceptance, quasi-existence is a means by which the absolutely immaterial materializes absolutely, and, being intermediate, is a state in which nothing is finally either immaterial or material, all objects, substances, thoughts, occupying some grade of approximation one way or the other. Final solidification of the ethereal is, to us, the goal of cosmic ambition. Positivism is Puritanism. Heat is Evil. Final Good is Absolute Frigidity. An Arctic winter is very beautiful, but I think that an interest in monkeys chattering in palm trees accounts for our own Intermediatism.

Visitors.

Our confusion here, out of which we are attempting to make quasi-order, is as great as it has been throughout this book, because we have not the positivist's delusion of homogeneity. A positivist would gather all data that seem to relate to one kind of visitors and coldly disregard all other data. I think of as many different kinds of visitors to this earth as there are visitors to New York, to a jail, to a church—some persons go to church to pick pockets, for instance.

My own acceptance is that either a world or a vast super-construction— or a world, if red substances and fishes fell from it— hovered over India in the summer of 1860. Something then fell from somewhere, July 17, 1860, at Dhurmsalla. Whatever "it" was, "it" is so persistently alluded to as "a meteorite" that I look back and see that I adopted this convention myself. But in the London *Times,* Dec. 26, 1860, Syed Abdoolah, Professor of Hindustani, University College, London, writes that he had sent to a friend in Dhurmsalla, for an account of the stones that had fallen at that place. The answer:

". . . divers forms and sizes, many of which bore great resemblance to ordinary cannon balls just discharged from engines of war."

It's an addition to our data of spherical objects that have arrived upon this earth. Note that they are spherical stone objects.

And, in the evening of this same day that something—took a shot at Dhurmsalla—or sent objects upon which there may be decipherable markings—lights were seen in the air—

I think, myself, of a number of things, beings, whatever they were, trying to get down, but resisted, like balloonists, at a certain altitude, trying to get farther up, but resisted.

Not in the least except to good positivists, or the homogeneous-minded, does this speculation interfere with the concept of some other world that is in successful communication with certain esoteric ones upon this earth, by a code of symbols that print in rock, like symbols of telephotographers in selenium.

I think that sometimes, in favorable circumstances, emissaries have come to this earth—secret meetings—

Of course it sounds—

But:

Secret meetings—emissaries—esoteric ones in Europe, before the war broke out—

And those who suggested that such phenomena could be.

However, as to most of our data, I think of super-things that have passed close to this earth with no more interest in this earth than have passengers upon a steamship in the bottom of the sea— or passengers may have a keen interest, but circumstances of schedules and commercial requirements forbid investigation of the bottom of the sea.

Then, on the other hand, we may have data of super-scientific attempts to investigate phenomena of this earth from above—perhaps by beings from so far away that they had never even heard that something, somewhere, asserts a legal right to this earth.

Altogether, we're good intermediatists, but we can't be very good hypnotists.

Still another source of the merging away of our data:

That, upon general principles of Continuity, if super-vessels, or super-vehicles, have traversed this earth's atmosphere, there must be mergers between them and terrestrial phenomena: observations upon them must merge away into observations upon clouds and balloons and meteors. We shall begin with data that we cannot distinguish ourselves and work our way out of mergers into extremes.

In the *Observatory,* 35-168, it is said that, according to a newspaper, March 6, 1912, residents of Warmley, England, were greatly excited by something that was supposed to be "a splendidly illuminated aeroplane, passing over the village." "The machine was apparently traveling at a tremendous rate, and came from the direction of Bath, and went on toward Gloucester." The Editor says that it was a large, triple-headed fireball. "Tremendous indeed!" he says. "But we are prepared for anything nowadays."

That is satisfactory. We'd not like to creep up stealthily and then jump out of a corner with our data. This Editor, at least, is prepared to read—

Nature, Oct. 27, 1898:

A correspondent writes that, in the County Wicklow, Ireland, at about 6 o'clock in the evening, he had seen, in the sky, an object that looked like the moon in its three-quarter aspect. We note the shape which approximates to triangularity, and we note that in color it is said to have been golden yellow. It moved slowly, and in about five minutes disappeared behind a mountain.

The Editor gives his opinion that the object may have been an escaped balloon.

In *Nature,* Aug. 11, 1898, there is a story, taken from the July number of the *Canadian Weather Review,* by the meteorologist, F. F. Payne: that he had seen, in the Canadian sky, a large, pear-shaped object, sailing rapidly. At first he supposed that the object was a balloon, "its outline being sharply defined." "But, as no cage was seen, it was concluded that it must be a mass of cloud." In about six minutes this object became less definite—whether

because of increasing distance or not—"the mass became less dense, and finally it disappeared." As to cyclonic formation—"no whirling motion could be seen."

Nature, 58-294:

That, upon July 8, 1898, a correspondent had seen, at Kiel, an object in the sky, colored red by the sun, which had set. It was about as broad as a rainbow, and about twelve degrees high. "It remained in its original brightness about five minutes, and then faded rapidly, and then remained almost stationary again, finally disappearing about eight minutes after I first saw it."

In an intermediate existence, we quasi-persons have nothing to judge by because everything is its own opposite. If a hundred dollars a week be a standard of luxurious living to some persons, it is poverty to others. We have instances of three objects that were seen in the sky in a space of three months, and this concurrence seems to me to be something to judge by. Science has been built upon concurrence: so have been most of the fallacies and fanaticisms. I feel the positivism of a Leverrier, or instinctively take to the notion that all three of these observations relate to the same object. However, I don't formulate them and predict the next transit. Here's another chance for me to become a fixed star—but as usual—oh, well—

A point in Intermediatism:

That the Intermediatist is likely to be a flaccid compromiser.

Our own attitude:

Ours is a partly positive and partly negative state, or a state in which nothing is finally positive or finally negative—

But, if positivism attract you, go ahead and try: you will be in harmony with cosmic endeavor—but Continuity will resist you. Only to have appearance in quasiness is to be proportionately positive, but beyond a degree of attempted positivism, Continuity will rise to pull you back. Success, as it is called—though there is only success-failure in Intermediateness—will, in Intermediateness, be yours proportionately as you are in adjustment with its own state, or some positivism mixed with compromise and retreat. To be very positive is to be a Napoleon Bonaparte, against whom the rest of civilization will sooner or later combine. For interesting data, see newspaper accounts of fate of one Dowie, of Chicago.

Intermediatism, then, is recognition that our state is only a quasi-state: it is no bar to one who desires to be positive: it is recognition that he cannot

be positive and remain in a state that is positive-negative. Or that a great positivist—isolated—with no system to support him—will be crucified, or will starve to death, or will be put in jail and beaten to death—that these are the birth-pangs of translation to the Positive Absolute.

So, though positive-negative, myself, I feel the attraction of the positive pole of our intermediate state, and attempt to correlate these three data: to see them homogeneously; to think that they relate to one object.

In the aeronautic journals and in the London *Times* there is no mention of escaped balloons, in the summer or fall of 1898. In the *New York Times* there is no mention of ballooning in Canada or the United States, in the summer of 1898.

London *Times*, Sept. 29, 1885:

A clipping from the *Royal Gazette*, of Bermuda, of Sept. 8, 1885, sent to the *Times* by General Lefroy:

That, upon Aug. 27, 1885, at about 8:30 A.M., there was observed by Mrs. Adelina D. Bassett, "a strange object in the clouds, coming from the north." She called the attention of Mrs. L. Lowell to it, and they were both somewhat alarmed. However, they continued to watch the object steadily for some time. It drew nearer. It was of triangular shape, and seemed to be about the size of a pilot-boat mainsail, with chains attached to the bottom of it. While crossing the land it had appeared to descend, but, as it went out to sea, it ascended, and continued to ascend, until it was lost to sight high in the clouds.

Or with such power to ascend, I don't think much myself of the notion that it was an escaped balloon, partly deflated. Nevertheless, General Lefroy, correlating with Exclusionism, attempts to give a terrestrial interpretation to this occurrence. He argues that the thing may have been a balloon that had escaped from France or England—or the only aerial thing of terrestrial origin that, even to this date of about thirty-five years later, has been thought to have crossed the Atlantic Ocean. He accounts for the triangular form by deflation—"a shapeless bag, barely able to float." My own acceptance is that great deflation does not accord with observations upon its power to ascend.

In the *Times*, Oct. 1, 1885, Charles Harding, of the R.M.S., argues that if it had been a balloon from Europe, surely it would have been seen and reported by many vessels. Whether he was as good a Briton as the General or not, he shows awareness of the United States—or that the thing may

have been a partly collapsed balloon that had escaped from the United States.

General Lefroy wrote to *Nature* about it (*Nature*, 33-99), saying — whatever his sensitivenesses may have been—that the columns of the *Times* were "hardly suitable" for such a discussion. If, in the past, there had been more persons like General Lefroy, we'd have better than the mere fragments of data that in most cases are too broken up very well to piece together. He took the trouble to write to a friend of his, W. H. Gosling, of Bermuda—who also was an extraordinary person. He went to the trouble of interviewing Mrs. Bassett and Mrs. Lowell. Their description to him was somewhat different:

An object from which nets were suspended—

Deflated balloon, with its network hanging from it—

A super-dragnet?

That something was trawling overhead?

The birds of Baton Rouge.

Mr. Gosling wrote that the item of chains, or suggestion of a basket that had been attached, had originated with Mr. Bassett, who had not seen the object. Mr. Gosling mentioned a balloon that had escaped from Paris in July. He tells of a balloon that fell in Chicago, September 17, or three weeks later than the Bermuda object.

It's one incredibility against another, with disregards and convictions governed by whichever of the two Dominants looms stronger in each reader's mind. That he can't think for himself any more than I can is understood.

My own correlates:

I think that we're fished for. It may be that we're highly esteemed by super-epicures somewhere. It makes me more cheerful when I think that we may be of some use after all. I think that dragnets have often come down and have been mistaken for whirlwinds and waterspouts. Some accounts of seeming structure in whirlwinds and waterspouts are astonishing. And I have data that, in this book, I can't take up at all—mysterious disappearances. I think we're fished for. But this is a little expression on the side: relates to trespassers; has nothing to do with the subject that I shall take up at some other time—or our use to some other mode of seeming that has a legal right to us.

Nature, 33-137:

"Our Paris correspondent writes that in relation to the balloon which is said to have been seen over Bermuda, in September, no ascent took place in France which can account for it."

Last of August: not September. In the London *Times* there is no mention of balloon ascents in Great Britain, in the summer of 1885, but mention of two ascents in France. Both balloons had escaped. In L'*Aéronaute,* August, 1885, it is said that these balloons had been sent up from fetes of the fourteenth of July—44 days before the observation at Bermuda. The aeronauts were Gower and Eloy. Gower's balloon was found floating on the ocean, but Eloy's balloon was not found. Upon the 17th of July it was reported by a sea captain: still in the air; still inflated.

But this balloon of Eloy's was a small exhibition balloon, made for short ascents from fetes and fair grounds. In *La Nature,* 1885-2-131, it is said that it was a very small balloon, incapable of remaining long in the air.

As to contemporaneous ballooning in the United States, I find only one account: an ascent in Connecticut, July 29, 1885. Upon leaving this balloon, the aeronauts had pulled the "rip cord," "turning it inside out." *{New York Times,* Aug. 10, 1885.)

To the Intermediatist, the accusation of "anthropomorphism" is meaningless. There is nothing in anything that is unique or positively different. We'd be materialists were it not quite as rational to express the material in terms of the immaterial as to express the immaterial in terms of the material. Oneness of allness in quasiness. I will engage to write the formula of any novel in psychochemic terms, or draw its graph in psycho-mechanic terms: or write, in romantic terms, the circumstances and sequences of any chemic or electric or magnetic reaction: or express any historic event in algebraic terms—or see Boole and Jevons for economic situations expressed algebraically.

I think of the Dominants as I think of persons—not meaning that they are real persons—not meaning that we are real persons—

Or the Old Dominant and its jealousy, and its suppression of all things and thoughts that endangered its supremacy. In reading discussions of papers, by scientific societies, I have often noted how, when they approached forbidden—or irreconcilable—subjects, the discussions were thrown into confusion and ramification. It's as if scientific discussions have often been led astray—as if purposefully —as if by something directive, hovering over them. Of course I mean only the Spirit of all Development.

Just so, in any embryo, cells that would tend to vary from the appearances of their era are compelled to correlate.

In *Nature*, 90-169, Charles Tilden Smith writes that, at Chisbury, Wiltshire, England, April 8, 1912, he saw something in the sky—

"—unlike anything that I had ever seen before."

"Although I have studied the skies for many years, I have never seen anything like it."

He saw two stationary dark patches upon clouds.

The extraordinary part:

They were stationary upon clouds that were rapidly moving.

They were fan-shaped—or triangular—and varied in size, but kept the same position upon different clouds as cloud after cloud came along. For more than half an hour Mr. Smith watched these dark patches—

His impression as to the one that appeared first:

That it was "really a heavy shadow cast upon a thin veil of clouds by some unseen object away in the west, which was intercepting the sun's rays."

Upon page 244, of this volume of *Nature*, is a letter from another correspondent, to the effect that similar shadows are cast by mountains upon clouds, and that no doubt Mr. Smith was right in attributing the appearance to "some unseen object, which was intercepting the sun's rays." But the Old Dominant that was a jealous Dominant, and the wrath of the Old Dominant against such an irreconcilability as large, opaque objects in the sky, casting down shadows upon clouds. Still the Dominants are suave very often, or are not absolute gods, and the way attention was led away from this subject is an interesting study in quasi-divine bamboozlement. Upon page 268, Charles J. P. Cave, the meteorologist, writes that, upon April 5 and 8, at Ditcham Park, Petersfield, he had observed a similar appearance, while watching some pilot balloons—but he describes something not in the least like a shadow on clouds, but a stationary cloud—the inference seems to be that the shadows at Chisbury may have been shadows of pilot balloons. Upon page 322, another correspondent writes upon shadows cast by mountains; upon page 348 someone else carries on the divergence by discussing this third letter: then someone takes up the third letter mathematically; and then there is a correction of error in this mathematic demonstration—I think it looks very much like what I think it looks like.

But the mystery here:

That the dark patches at Chisbury could not have been cast by stationary pilot balloons that were to the west, or that were between clouds and the setting sun. If, to the west of Chisbury, a stationary object were high in the air, intercepting the sun's rays, the shadow of the stationary object would not have been stationary, but would have moved higher and higher with the setting of the sun.

I have to think of something that is in accord with no other data whatsoever:

A luminous body—not the sun—in the sky—but, because of some unknown principle or atmospheric condition, its light extended down only about to the clouds; that from it were suspended two triangular objects, like the object that was seen in Bermuda; that it was this light that fell short of the earth that these objects intercepted; that the objects were drawn up and lowered from something overhead, so that, in its light, their shadows changed size.

If my grope seem to have no grasp in it, and, if a stationary balloon will, in half an hour, not cast a stationary shadow from the setting sun, we have to think of two triangular objects that accurately maintained positions in a line between sun and clouds, and at the same time approached and receded from clouds. Whatever it may have been, it's enough to make the devout make the sign of the crucible, or whatever the devotees of the Old Dominant do in the presence of a new correlate.

Vast, black thing poised like a crow over the moon.

It is our acceptance that these two shadows of Chisbury looked, from the moon, like vast things, black as crows, poised over the earth. It is our acceptance that two triangular luminosities and then two triangular patches, like vast black things, poised like crows over the moon, and, like the triangularities at Chisbury, have been seen upon, or over, the moon:

Scientific American, 46-49:

Two triangular, luminous appearances reported by several observers in Lebanon, Conn., evening of July 3, 1882, on the moon's upper limb. They disappeared, and two dark triangular appearances that looked like notches were seen three minutes later upon the lower limb. They approached each other, met and instantly disappeared.

The merger here is notches that have at times been seen upon the moon's limb: thought to be cross sections of craters (*Monthly Notices, R. A. S.*, 37-

432). But these appearances of July 3, 1882, were vast upon the moon —"seemed to be cutting off or obliterating nearly a quarter of its surface."

Something else that may have looked like a vast black crow poised over this earth from the moon:

Monthly Weather Review, 41-599:

Description of a shadow in the sky, of some unseen body, April 8, 1913, Fort Worth, Texas—supposed to have been cast by an unseen cloud—this patch of shade moved with the declining sun.

Rept. Brit. Assoc., 1854-410:

Account by two observers of a faint but distinctly triangular object, visible for six nights in the sky. It was observed from two stations that were not far apart. But the parallax was considerable. Whatever it was, it was, acceptably, relatively close to this earth.

I should say that relatively to phenomena of light we are in confusion as great as some of the discords that orthodoxy is in relatively to light. Broadly and intermediatistically, our position is:

That light is not really and necessarily light—any more than is anything else really and necessarily anything—but an interpretation of a mode of force, as I suppose we have to call it, as light. At sea level, the earth's atmosphere interprets sunlight as red or orange or yellow. High up on mountains the sun is blue. Very high up on mountains the zenith is black. Or it is orthodoxy to say that in inter-planetary space, where there is no air, there is no light. So then the sun and comets are black, but this earth's atmosphere, or, rather, dust particles in it, interpret radiations from these black objects as light.

We look up at the moon.

The jet-black moon is so silvery white.

I have about fifty notes indicating that the moon has atmosphere: nevertheless most astronomers hold out that the moon has no atmosphere. They have to: the theory of eclipses would not work out otherwise. So, arguing in conventional terms, the moon is black. Rather astonishing—explorers upon the moon—stumbling and groping in intense darkness—with telescopes powerful enough, we could see them stumbling and groping in brilliant light.

Or, just because of familiarity, it is not now obvious to us how the preposterousnesses of the old system must have seemed to the correlates of the system preceding it.

Ye jet-black silvery moon.

Altogether, then, it may be conceivable that there are phenomena of force that are interpretable as light as far down as the clouds, but not in denser strata of air, or just the opposite of familiar interpretations.

I now have some notes upon an occurrence that suggests a force not interpreted by air as light, but interpreted, or reflected by the ground as light. I think of something that, for a week, was suspended over London: of an emanation that was not interpreted as light until it reached the ground.

Lancet, June 1, 1867:

That every night for a week, a light had appeared in Woburn Square, London, upon the grass of a small park, enclosed by railings. Crowds gathering—police called out "for the special service of maintaining order and making the populace move on." The Editor of the *Lancet* went to the Square. He says that he saw nothing but a patch of light falling upon an arbor at the northeast corner of the enclosure. Seems to me that that was interesting enough.

In this Editor we have a companion for Mr. Symons and Dr. Gray. He suggests that the light came from a street lamp—does not say that he could trace it to any such origin himself—but recommends that the police investigate neighboring street lamps.

I'd not say that such a commonplace as light from a street lamp would not attract and excite and deceive great crowds for a week —but I do accept that any cop who was called upon for extra work would have needed nobody's suggestion to settle that point the very first thing.

Or that something in the sky hung suspended over a London Square for a week.

21

Knowledge, Dec. 28, 1883:

"SEEING so many meteorological phenomena in your excellent paper, *Knowledge,* I am tempted to ask for an explanation of the following, which I saw when on board the British India Company's steamer *Patna,* while on a voyage up the Persian Gulf. In May, 1880, on a dark night, about 11:30 P.M., there suddenly appeared on each side of the ship an enormous luminous wheel, whirling around, the spokes of which seemed to brush the ship along. The spokes would be 200 or 300 yards long, and resembled the birch rods of the dames' schools. Each wheel contained about sixteen spokes, and, although the wheels must have been some 500 or 600 yards in diameter, the spokes could be distinctly seen all the way round. The phosphorescent gleam seemed to glide along flat on the surface of the sea, no light being visible in the air above the water. The appearance of the spokes could be almost exactly represented by standing in a boat and flashing a bull's eye lantern horizontally along the surface of the water, round and round. I may mention that the phenomenon was also seen by Captain Avern, of the *Patna,* and Mr. Manning, third officer.

"Lee Fore Brace.

"P. S.—The wheels advanced along with the ship for about twenty minutes.—L. F. B."

Knowledge, Jan. 11, 1884:

Letter from "A. Mc. D.":

That "Lee Fore Brace," "who sees 'so many meteorological phenomena in your excellent paper,' should have signed himself 'The Modern Ezekiel,' for his vision of wheels is quite as wonderful as the prophet's." The writer then takes up the measurements that were given, and calculates a velocity at the circumference of a wheel, of about 166 yards per second, apparently considering that especially incredible. He then says: "From the nom de plume he assumes, it might be inferred that your correspondent is in the habit of 'sailing close to the wind.'" He asks permission to suggest an explanation of his own. It is that before 11:30 P.M. there had been numerous

accidents to the “main brace,” and that it had required splicing so often that almost any ray of light would have taken on a rotary motion.

In *Knowledge,* Jan. 25, 1884, Mr. “Brace” answers and signs himself “J. W. Robertson”:

“I don’t suppose A. Mc. D. means any harm, but I do think it’s rather unjust to say a man is drunk because he sees something out of the common. If there’s one thing I pride myself upon, it’s being able to say that never in my life have I indulged in anything stronger than water.” From this curiosity of pride, he goes on to say that he had not intended to be exact, but to give his impressions of dimensions and velocity. He ends amiably: “However, ‘no offense taken, where I suppose none is meant.’”

To this letter Mr. Proctor adds a note, apologizing for the publication of “A. Mc. D’s.” letter, which had come about by a misunderstood instruction. Then Mr. Proctor wrote disagreeable letters, himself, about other persons—what else would you expect in a quasi-existence?

The obvious explanation of this phenomenon is that, under the surface of the sea, in the Persian Gulf, was a vast luminous wheel: that it was the light from its submerged spokes that Mr. Robertson saw, shining upward. It seems clear that this light did shine upward from origin below the surface of the sea. But at first it is not so clear how vast luminous wheels, each the size of a village, ever got under the surface of the Persian Gulf: also there may be some misunderstanding as to what they were doing there.

A deep-sea fish, and its adaptation to a dense medium—

That, at least in some regions aloft, there is a medium dense even to gelatinousness—

A deep-sea fish, brought to the surface of the ocean: in a relatively attenuated medium, it disintegrates—

Super-constructions adapted to a dense medium in inter-planetary space—sometimes, by stresses of various kinds, they are driven into this earth’s thin atmosphere—

Later we shall have data to support just this: that things entering this earth’s atmosphere disintegrate and shine with a light that is not the light of incandescence: shine brilliantly, even if cold—

Vast wheel-like super-constructions—they enter this earth’s atmosphere, and, threatened with disintegration, plunge for relief into an ocean, or into a denser medium.

Of course the requirements now facing us are:

Not only data of vast wheel-like super-constructions that have relieved their distresses in the ocean, but data of enormous wheels that have been seen in the air, or entering the ocean, or rising from the ocean and continuing their voyages.

Very largely we shall concern ourselves with enormous fiery objects that have either plunged into the ocean or risen from the ocean. Our acceptance is that, though disruption may intensify into incandescence, apart from disruption and its probable fieriness, things that enter this earth's atmosphere have a cold light which would not, like light from molten matter, be instantly quenched by water. Also it seems acceptable that a revolving wheel would, from a distance, look like a globe; that a revolving wheel, seen relatively close by, looks like a wheel in few aspects. The mergers of ball-lightning and meteorites are not resistances to us: our data are of enormous bodies.

So we shall interpret—and what does it matter?

Our attitude throughout this book:

That here are extraordinary data—that they never would be exhumed, and never would be massed together, unless—

Here are the data:

Our first datum is of something that was once seen to enter an ocean. It's from the puritanic publication, *Science*, which has yielded us little material, or which, like most puritans, does not go upon a spree very often. Whatever the thing could have been, my impression is of tremendousness, or of bulk many times that of all meteorites in all museums combined: also of relative slowness, or of long warning of approach. The story, in *Science*, 5-242, is from an account sent to the Hydrographic Office, at Washington, from the branch office, at San Francisco:

That, at midnight, Feb. 24, 1885, Lat. 37° N., and Long. 170° E., or somewhere between Yokohama and Victoria, the captain of the bark *Innerwich* was aroused by his mate, who had seen something unusual in the sky. This must have taken appreciable time. The captain went on deck and saw the sky turning fiery red. "All at once, a large mass of fire appeared over the vessel, completely blinding the spectators." The fiery mass fell into the sea. Its size may be judged by the volume of water cast up by it, said to have rushed toward the vessel with a noise that was "deafening." The bark was struck flat aback, and "a roaring, white sea passed ahead." "The master,

an old, experienced mariner, declared that the awfulness of the sight was beyond description."

In *Nature*, 37-187, and *L'Astronomie*, 1887-76, we are told that an object, described as "a large ball of fire," was seen to rise from the sea, near Cape Race. We are told that it rose to a height of fifty feet, and then advanced close to the ship, then moving away, remaining visible about five minutes. The supposition in *Nature* is that it was "ball lightning," but Flammarion, *Thunder and Lightning*, p. 68, says that it was enormous. Details in the American *Meteorological Journal*, 6-443—Nov. 12, 1887—British steamer *Siberian*—that the object had moved "against the wind" before retreating—that Captain Moore said that at about the same place he had seen such appearances before.

"Report of the British Association, 1861-30:

That, upon June 18, 1845, according to the *Malta Times*, from the brig *Victoria*, about 900 miles east of Adalia, Asia Minor (36° 40′ 56″, N. Lat.: 13° 44′ 36″ E. Long.), three luminous bodies were seen to issue from the sea, at about half a mile from the vessel. They were visible about ten minutes.

The story was never investigated, but other accounts that seem acceptably to be other observations upon this same sensational spectacle came in, as if of their own accord, and were published by Prof. Baden-Powell. One is a letter from a, correspondent at Mt. Lebanon. He describes only two luminous bodies. Apparently they were five times the size of the moon: each had appendages, or they were connected by parts that are described as "sail-like or streamer-like," looking like "large flags blown out by a gentle breeze." The important point here is not only suggestion of structure, but duration. The duration of meteors is a few seconds: duration of fifteen seconds is remarkable, but I think there are records up to half a minute. This object, if it were all one object, was visible at Mt. Lebanon about one hour. An interesting circumstance is that the appendages did not look like trains of meteors, which shine by their own light, but "seemed to shine by light from the main bodies."

About 900 miles west of the position of the *Victoria* is the town of Adalia, Asia Minor. At about the time of the observation reported by the captain of the *Victoria*, the Rev. F. Hawlett, F.R. A.S., was in Adalia. He, too, saw this spectacle, and sent an account to Prof. Baden-Powell. In his

view it was a body that appeared and then broke up. He places duration at twenty minutes to half an hour.

In the *Report of the British Association*, 1860-82, the phenomenon was reported from Syria and Malta, as two very large bodies "nearly joined."

Rept. Brit. Assoc., 1860-77:

That, at Cherbourg, France, Jan. 12, 1836, was seen a luminous body, seemingly two-thirds the size of the moon. It seemed to rotate on an axis. Central to it there seemed to be a dark cavity.

For other accounts, all indefinite, but distortable into data of wheel-like objects in the sky, see *Nature*, 22-617; London *Times*, Oct. 15, 1859; *Nature*, 21-225; *Monthly Weather Review*, 1883-264.

L'Astronomie, 1894-157:

That, upon the morning of Dec. 20, 1893, an appearance in the sky was seen by many persons in Virginia, North Carolina, and South Carolina. A luminous body passed overhead, from west to east, until at about 15 degrees in the eastern horizon, it appeared to stand still for fifteen or twenty minutes. According to some descriptions it was the size of a table. To some observers it looked like an enormous wheel. The light was a brilliant white. Acceptably it was not an optical illusion—the noise of its passage through the air was heard. Having been stationary, or having seemed to stand still fifteen or twenty minutes, it disappeared, or exploded. No sound of explosion was heard.

Vast wheel-like constructions. They're especially adapted to roll through a gelatinous medium from planet to planet. Sometimes, because of miscalculations, or because of stresses of various kinds, they enter this earth's atmosphere. They're likely to explode. They have to submerge in the sea. They stay in the sea awhile, revolving with relative leisureliness, until relieved, and then emerge, sometimes close to vessels. Seamen tell of what they see: their reports are interred in scientific morgues. I should say that the general route of these constructions is along latitudes not far from the latitudes of the Persian Gulf.

Journal of the Royal Meteorological Society, 28-29:

That, upon April 4, 1901, about 8:30, in the Persian Gulf, Captain Hoseason, of the steamship *Kilwa*, according to a paper read before the Society by Captain Hoseason, was sailing in a sea in which there was no phosphorescence—"there being no phosphores-cence in the water."

I suppose I'll have to repeat that:

". . . there being no phosphorescence in the water."

Vast shafts of light—though the captain uses the word "ripples" — suddenly appeared. Shaft followed shaft, upon the surface of the sea. But it was only a faint light, and, in about fifteen minutes, died out: having appeared suddenly, having died out gradually. The shafts revolved at a velocity of about 60 miles an hour.

Phosphorescent jellyfish correlate with the Old Dominant: in one of the most heroic compositions of disregards in our experience, it was agreed, in the discussion of Capt. Hoseason's paper, that the phenomenon was probably pulsations of long strings of jellyfish.

Nature, 21-410:

Reprint of a letter from R. E. Harris, Commander of the A. H. N. Co.'s steamship *Shahjehan,* to the Calcutta *Englishman,* Jan. 21, 1880:

That upon the 5th of June, 1880, off the coast of Malabar, at 10 P.M., water calm, sky cloudless, he had seen something that was so foreign to anything that he had ever seen before, that he had stopped his ship. He saw what he describes as waves of brilliant light, with spaces between. Upon the water were floating patches of a substance that was not identified. Thinking in terms of the conventional explanation of all phosphorescence at sea, the captain at first suspected this substance. However, he gives his opinion that it did no illuminating but was, with the rest of the sea, illuminated by tremendous shafts of light. Whether it was a thick and oily discharge from the engine of a submerged construction or not, I think that I shall have to accept this substance as a concomitant, because of another note. "As wave succeeded wave, one of the most grand and brilliant, yet solemn, spectacles that one could think of, was here witnessed."

Jour. Roy. Met. Soc., 32-280:

Extract from a letter from Mr. Douglas Carnegie, Blackheath, England. Date some time in 1906—

"This last voyage we witnessed a weird and most extraordinary electric display." In the Gulf of Oman, he saw a bank of apparently quiescent phosphorescence: but, when within twenty yards of it, "shafts of brilliant light came sweeping across the ship's bows at a prodigious speed, which might be put down as anything between 60 and 200 miles an hour." "These light bars were about 20 feet apart and most regular." As to phosphorescence—"I collected a bucketful of water, and examined it under the microscope, but could not detect anything abnormal." That the shafts of

light came up from something beneath the surface—"They first struck us on our broadside, and I noticed that an intervening ship had no effect on the light beams: they started away from the lee side of the ship, just as if they had traveled right through it."

The Gulf of Oman is at the entrance to the Persian Gulf.

Jour. Roy. Met. Soc., 33-294:

Extract from a letter by Mr. S. C. Patterson, second officer of the P. and O. steamship *Delta:* a spectacle which the *Journal* continues to call phosphorescent:

Malacca Strait, 2 A.M., March 14, 1907:

". . . shafts which seemed to move round a center—like the spokes of a wheel—and appeared to be about 300 yards long." The phenomenon lasted about half an hour, during which time the ship had traveled six or seven miles. It stopped suddenly."

L'Astronomie, 1891-312:

A correspondent writes that, in October, 1891, in the China Sea, he had seen shafts or lances of light that had had the appearance of rays of a searchlight, and that had moved like such rays.

Nature, 20-291:

Report to the Admiralty by Capt. Evans, the Hydrographer of the British Navy:

That Gommander J. E. Pringle, of H. M. S. *Vulture*, had reported that, at Lat. 26° 26′ N., and Long. 53° 11′ E.—in the Persian Gulf—May 15, 1879, he had noticed luminous waves or pulsations in the water, moving at great speed. This time we have a definite datum upon origin somewhere below the surface. It is said that these waves of light passed under the *Vulture*. "On looking toward the east, the appearance was that of a revolving wheel with a center on that bearing, and whose spokes were illuminated, and, looking toward the west, a similar wheel appeared to be revolving, but in the opposite direction." Or finally as to submergence— "These waves of light extended from the surface well under the water." It is Commander Pringle's opinion that the shafts constituted one wheel, and that doubling was an illusion. He judges the shafts to have been about 25 feet broad, and the spaces about 100. Velocity about 84 miles an hour. Duration about 35 minutes. Time 9:40 P.M. Before and after this display the ship had passed through patches of floating substance described as "oily-looking fish spawn."

Upon page 428 of this number of *Nature*, E. L. Moss says that, in April, 1875, when upon H. M. S. *Bulldog*, a few miles north of Vera Cruz, he had seen a series of swift lines of light. He had dipped up some of the water, finding in it animalcule, which would, however, not account for phenomena of geometric formation and high velocity. If he means Vera Cruz, Mexico, this is the only instance we have out of oriental waters.

Scientific American, 106-51:

That, in the *Nautical Meteorological Annual*, published by the Danish Meteorological Institute, appears a report upon a "singular phenomenon" that was seen by Capt. Gabe, of the Danish East Asiatic Co.'s steamship *Bintang*. At 3 A.M., June 10, 1909, while sailing through the Straits of Malacca, Captain Gabe saw a vast revolving wheel of light, flat upon the water—"long arms issuing from a center around which the whole system appeared to rotate." So vast was the appearance that only half of it could be seen at a time, the center lying near the horizon. This display lasted about fifteen minutes. Heretofore we have not been clear upon the important point that forward motions of these wheels do not synchronize with a vessel's motions, and freaks of disregard, or, rather, commonplaces of disregard, might attempt to assimilate with lights of a vessel. This time we are told that the vast wheel moved forward, decreasing in brilliancy, and also in speed of rotation, disappearing when the center was right ahead of the vessel—or my own interpretation would be that the source of light was submerging deeper and deeper and slowing down because meeting more and more resistance.

The Danish Meteorological Institute reports another instance:

That, when Capt. Breyer, of the Dutch steamer *Valentijn*, was in the South China Sea, midnight, Aug. 12, 1910, he saw a rotation of flashes. "It looked like a horizontal wheel, turning rapidly." This time it is said that the appearance was above water. "The phenomenon was observed by the captain, the first and second mates, and the first engineer, and upon all of them it made a somewhat uncomfortable impression."

In general, if our expression be not immediately acceptable, we recommend to rival interpreters that they consider the localization —with one exception—of this phenomenon, to the Indian Ocean and adjacent waters, or Persian Gulf on one side and China Sea on the other side. Though we're Intermediatists, the call of attempted Positivism, in the aspect of Completeness, is irresistible. We have expressed that from few aspects

would wheels of fire in the air look like wheels of fire, but, if we can get it, we must have observation upon vast luminous wheels, not interpretable as optical illusions, but enormous, substantial things that have smashed down material resistances, and have been seen to plunge into the ocean:

Athenceum, 1848-833:

That at the meeting of the British Association, 1848, Sir W. S. Harris said that he had recorded an account sent to him of a vessel toward which had whirled “two wheels of fire, which the men described as rolling millstones of fire.” “When they came near, an awful crash took place: the topmasts were shivered to pieces.” It is said that there was a strong sulphurous odor.

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Journal of the Royal Meteorological Society, 1-157:

EXTRACT from the log of the bark *Lady of the Lake*, by Capt. F. W. Banner:

Communicated by R. H. Scott, F.R.S.:

That, upon the 22nd of March, 1870, at Lat. 5° 47′ N., Long. 27° 52′ W., the sailors of the *Lady of the Lake* saw a remarkable object, or "cloud," in the sky. They reported to the captain.

According to Capt. Banner, it was a cloud of circular form, with an included semicircle divided into four parts, the central dividing shaft beginning at the center of the circle and extending far outward, and then curving backward.

Geometricity and complexity and stability of form: and the small likelihood of a cloud maintaining such diversity of features, to say nothing of appearance of organic form.

The thing traveled from a point at about 20 degrees above the horizon to a point about 80 degrees above. Then it settled down to the northeast, having appeared from the south, southeast.

Light gray in color, or it was cloud-color.

"It was much lower than the other clouds."

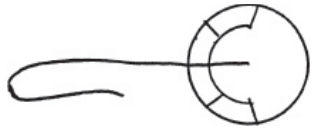
And this datum stands out:

That, whatever it may have been, it traveled against the wind.

"It came up obliquely against the wind, and finally settled down right in the wind's eye."

For half an hour this form was visible. When it did finally disappear that was not because it disintegrated like a cloud, but because it was lost to sight in the evening darkness.

Capt. Banner draws the following diagram:



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TEXT-BOOKS tell us that the Dhurmsalla meteorites were picked up "soon," or "within half an hour." Given a little time the conventionalists may argue that these stones were hot when they fell, but that their great interior coldness had over, come the molten state of their surfaces.

According to the Deputy Commissioner of Dhurmsalla, these stones had been picked up "immediately" by passing coolies.

These stones were so cold that they benumbed the fingers. But they had fallen with a great light. It is described as "a flame of fire about two feet in depth and nine feet in length." Acceptably this light was not the light of molten matter.

In this chapter we are very intermediatistic—and unsatisfactory. To the intermediatist there is but one answer to all questions:

Sometimes and sometimes not.

Another form of this intermediatist "solution" of all problems is:

Yes and no.

Everything that is, also isn't.

A positivist attempts to formulate: so does the intermediatist, but with less rigorousness: he accepts but also denies: he may seem to accept in one respect and deny in some other respect, but no real line can be drawn between any two aspects of anything. The inter-mediatist accepts that which seems to correlate with something that he has accepted as a dominant. The positivist correlates with a belief.

In the Dhurmsalla meteorites we have support for our expression that things entering this earth's atmosphere sometimes shine with a light that is not the light of incandescence—or so we account, or offer an expression upon, "thunderstones," or carved stones that have fallen luminously to this earth, in streaks that have looked like strokes of lightning—but we accept, also, that some things that have entered this earth's atmosphere, disintegrate with the intensity of flame and molten matter—but some things, we accept, enter this earth's atmosphere and collapse non-luminously, quite like deep-

sea fishes brought to the surface of the ocean. Whatever agreement we have is an indication that somewhere aloft there is a medium denser than this earth's atmosphere. I suppose our stronghold is in that such is not popular belief—

Or the rhythm of all phenomena:

Air dense at sea level upon this earth—less and less dense as one ascends —then denser and denser. A good many bothersome questions arise—

Our attitude:

Here are the data:

Luminous rains sometimes fall (*Nature,* March 9, 1882; *Nature,* 25-437). This is light that is not the light of incandescence, but no one can say that these occasional, or rare, rains come from this earth's externality. We simply note cold light of falling bodies. For luminous rain, snow, and dust, see Hartwig, *Aerial World,* p. 319. As to luminous clouds, we have more nearly definite observations and opinions: they mark transition between the Old Dominant and the New Dominant. We have already noted the transition in Prof. Schwedoff's theory of external origin of some hailstones—and the implications that, to a former generation, seemed so preposterous— "droll" was the word—that there are in inter-planetary regions volumes of water—whether they have fishes and frogs in them or not. Now our acceptance is that clouds sometimes come from external regions, having had origin from super-geographical lakes and oceans that we shall not attempt to chart, just at present—only suggesting to enterprising aviators—and we note that we put it all up to them, and show no inclination to go Columbusing on our own account— that they take bathing suits, or, rather, deep-sea diving-suits along. So then that some clouds come from inter-planetary oceans—of the Super-Sargasso Sea—if we still accept the Super-Sargasso Sea—and shine, upon entering this earth's atmosphere. In *Himmel und Erde,* February, 1889 —a phenomenon of transition of thirty years ago— Herr O. Jesse, in his observations upon luminous night-clouds, notes the great height of them, and drolly or sensibly suggests that some of them may have come from regions external to this earth. I suppose he means only from other planets. But it's a very droll and sensible idea either way.

In general I am accounting for a great deal of this earth's isolation: that it is relatively isolated by circumstances that are similar to the circumstances that make for relative isolation of the bottom of the ocean—except that there is a clumsiness of analogy now. To call ourselves deep-sea fishes has

been convenient, but, in a quasiexistence, there is no convenience that will not sooner or later turn awkward—so, if there be denser regions aloft, these regions should now be regarded as analogues of far-submerged oceanic regions, and things coming to this earth would be like things rising to an attenuated medium—and exploding—sometimes incandescently, sometimes with cold light—sometimes non-luminously, like deep-sea fishes brought to the surface—altogether conditions of inhospitality. I have a suspicion that, in their own depths, deep-sea fishes are not luminous. If they are, Darwinism is mere jesuitism, in attempting to correlate them. Such advertising would so attract attention that all advantages would be more than offset. Darwinism is largely a doctrine of concealment: here we have brazen proclamation—if accepted. Fishes in the Mammoth Cave need no light to see by. We might have an expression that deep-sea fishes turn luminous upon entering a less dense medium—but models in the American Museum of Natural History: specialized organs of luminosity upon these models. Of course we do remember that awfully convincing "dodo," and some of our sophistications we trace to him—at any rate disruption is regarded as a phenomenon of coming from a dense to a less dense medium.

An account by M. Acharius, in the *Transactions of the Swedish Academy of Sciences,* 1808-215, translated for the *North American Review,* 3-319:

That M. Acharius, having heard of "an extraordinary and probably hitherto unseen phenomenon," reported from near the town of Skeninge, Sweden, investigated:

That, upon the 16th of May, 1808, at about 4 P.M., the sun suddenly turned dull brick-red. At the same time there appeared, upon the western horizon, a great number of round bodies, dark brown, and seemingly the size of a hat crown. They passed overhead and disappeared in the eastern horizon. Tremendous procession. It lasted two hours. Occasionally one fell to the ground. When the place of a fall was examined, there was found a film, which soon dried and and vanished. Often, when approaching the sun, these bodies seemed to link together, or were then seen to be linked together, in groups not exceeding eight, and, under the sun, they were seen to have tails three or four fathoms long. Away from the sun the tails were invisible. Whatever their substance may have been, it is described as gelatinous —"soapy and jellied."

I place this datum here for several reasons. It would have been a good climax to our expression upon hordes of small bodies that, in our

acceptance, were not seeds, nor birds, nor ice-crystals: but the tendency would have been to jump to the homogeneous conclusion that all our data in that expression related to this one kind of phenomena, whereas we conceive of infinite heterogeneity of the external: of crusaders and rabbles and emigrants and tourists and dragons and things like gelatinous hat crowns. Or that all things, here, upon this earth, that flock together, are not necessarily sheep, Presbyterians, gangsters, or porpoises. The datum is important to us, here, as indication of disruption in this earth's atmosphere — dangers in entering this earth's atmosphere.

I think, myself, that thousands of objects have been seen to fall from aloft, and have exploded luminously, and have been called "ball lightning."

"As to what ball lightning is, we have not yet begun to make intelligent guesses." (*Monthly Weather Review,* 34-17.)

In general, it seems to me that when we encounter the opposition "ball lightning" we should pay little attention; but confine ourselves to guesses that are at least intelligent, that stand phantom-like in our way. We note here that in some of our acceptances upon intelligence we should more clearly have pointed out that they were upon the intelligent as opposed to the instinctive. In the *Monthly Weather Review,* 33-409, there is an account of "ball lightning" that struck a tree. It made a dent such as a falling object would make. Some other time I shall collect instances of "ball lightning," to express that they are instances of objects that have fallen from the sky, luminously, exploding terrifically. So bewildered is the old orthodoxy by these phenomena that many scientists have either denied "ball lightning" or have considered it very doubtful. I refer to Dr. Sestier's list of one hundred and fifty instances, which he considered authentic.

In accord with our disaccord is an instance related in the *Monthly Weather Review,* March, 1887—something that fell luminously from the sky, accompanied by something that was not so affected, or that was dark:

That, according to Capt. C. D. Sweet, of the Dutch bark, J. *P. A.*, upon March 19, 1887, N. 37° 39′, W. 57° 00′, he encountered a severe storm. He saw two objects in the air above the ship. One was luminous, and might be explained in several ways, but the other was dark. One or both fell into the sea, with a roar and the casting up of billows. It is our acceptance that these things had entered this earth's atmosphere, having first crashed through a field of ice—"immediately afterward lumps of ice fell."

One of the most astonishing of the phenomena of “ball lightning” is a phenomenon of many meteorites: violence of explosion out of all proportion to size and velocity. We accept that the icy meteorites of Dhurmsalla could have fallen with no great velocity, but the sound from them was tremendous. The soft substance that fell at the Cape of Good Hope was carbonaceous, but was unburned, or had fallen with velocity insufficient to ignite it. The tremendous report that it made was heard over an area more than seventy miles in diameter.

That some hailstones have been formed in a dense medium, and violently disintegrate in this earth’s relatively thin atmosphere:

Nature, 88-350:

Large hailstones noted at the University of Missouri, Nov. 11, 1911: they exploded with sounds like pistol shots. The writer says that he had noticed a similar phenomenon, eighteen years before, at Lexington, Kentucky. Hailstones that seemed to have been formed in a denser medium: when melted under water they gave out bubbles larger than their central air spaces. (*Monthly Weather Review,* 33-445.)

Our acceptance is that many objects have fallen from the sky, but that many of them have disintegrated violently. This acceptance will co-ordinate with data still to come, but, also, we make it easy for ourselves in our expressions upon super-constructions, if we’re asked why, from thinkable wrecks of them, girders, plates, or parts recognizably of manufactured metal have not fallen from the sky. However, as to composition, we have not this refuge, so it is our expression that there have been reported instances of the fall of manufactured metal from the sky.

The meteorite of Rutherford, North Carolina, is of artificial material: mass of pig iron. It is said to be fraudulent. (*Amer. Jour. Sci.,* 2-34-298.)

The object that was said to have fallen at Marblehead, Mass., in 1858, is described in the *Amer. Jour. Sci.,* 2-34-135, as “a furnace product, formed in smelting copper ores, or iron ores containing copper.” It is said to be fraudulent.

According to Ehrenberg, the substance reported by Capt. Callam to have fallen upon his vessel, near Java, “offered complete resemblance to the residue resulting from combustion of a steel wire in a flask of oxygen.” (Zurcher, *Meteors,* p. 239.) *Nature,* Nov. 21, 1878, publishes a notice that, according to the *Yuma Sentinel,* a meteorite that “resembles steel” had been found in the Mohave Desert. In *Nature,* Feb. 15, 1894, we read that one of

the meteorites brought to the United States by Peary, from Greenland, is of tempered steel. The opinion is that meteoric iron had fallen in water or snow, quickly cooling and hardening. This does not apply to composition. Nov. 5, 1898, *Nature* publishes a notice of a paper by Prof. Berwerth, of Vienna, upon “the close connection between meteoric iron and steel-works’ steel.”

At the meeting of Nov. 24, 1906, of the Essex Field Club, was exhibited a piece of metal said to have fallen from the sky, Oct. 9, 1906, at Braintree. According to the *Essex Naturalist*, Dr. Fletcher, of the British Museum, had declared this metal to be smelted iron— “so that the mystery of its reported ‘fall’ remained unexplained.”

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WE shall have an outcry of silences. If a single instance of anything be disregarded by a System—our own attitude is that a single instance is a powerless thing. Of course our own method of agreement of many instances is not a real method. In Continuity, all things must have resemblances with all other things. Anything has any quasi-identity you please. Some time ago conscription was assimilated with either autocracy or democracy with equal facility. Note the need for a dominant to correlate to. Scarcely anybody said simply that we must have conscription: but that we must have conscription, which correlates with democracy, which was taken as a base, or something basically desirable. Of course between autocracy and democracy nothing but false demarcation can be drawn. So I can conceive of no subject upon which there should be such poverty as a single instance, if anything one pleases can be whipped into line. However, we shall try to be more nearly real than the Darwinites who advance concealing coloration as Darwinism, and then drag in proclaiming luminosity, too, as Darwinism. I think the Darwinites had better come in with us as to the deep-sea fishes—and be sorry later, I suppose. It will be amazing or negligible to read all the instances now to come of things that have been seen in the sky, and to think that all have been disregarded. My own opinion is that it is not possible, or very easy, to disregard them, now that they have been brought together —but that, if prior to about this time we had attempted such an assemblage, the Old Dominant would have withered our typewriter —as it is the letter “e” has gone back on us, and the “s” is temperamental.

“Most extraordinary and singular phenomenon,” North Wales, Aug. 26, 1894; a disk from which projected an orange-colored body that looked like “an elongated flatfish,” reported by Admiral Ommanney (*Nature*, 50-524); disk from which projected a hook-like form, India, about 1838; diagram of it given; disk about size of the moon, but brighter than the moon; visible about twenty minutes; by G. Pettit, in Prof. Baden-Powell’s Catalogue (*Rept. Brit. Assoc.*, 1849); very brilliant hook-like form, seen in the sky at

Poland, Trumbull Co., Ohio, during the stream of meteors, of 1833; visible more than an hour: large luminous body, almost stationary "for a time"; shaped like a square table; Niagara Falls, Nov. 13, 1833 (*Amer. Jour. Sci.,* 1-25-391); something described as a bright white cloud, at night, Nov. 3, 1886, at Hamar, Norway; from it were emitted brilliant rays of light; drifted across the sky; "retained throughout its original form" (*Nature,* Dec. 16, 1886-158); thing with an oval nucleus, and streamers with dark bands and lines very suggestive of structure; New Zealand, May 4, 1888 (*Nature,* 42-402); luminous object, size of full moon, visible an hour and a half, Chili, Nov. 5, 1883 (*Comptes Rendus,* 103-682); bright object near sun, Dec. 21, 1882 (*Knowledge,* 3-13); light that looked like a great flame, far out at sea, off Ryook Phyoo, Dec. 2, 1845 (*London Roy. Soc. Proc.*, 5-627); something like a gigantic trumpet, suspended, vertical, oscillating gently, visible five or six minutes, length estimated at 425 feet, at Oaxaca, Mexico, July 6, 1874 (*Sci. Am. Sup.*, 6-2365); two luminous bodies, seemingly united, visible five or six minutes, June 3, 1898 (*La Nature,* 1898-1-127); thing with a tail, crossing moon, transit half a minute, Sept. 26, 1870 (London *Times,* Sept. 30, 1870); object four or five times size of moon, moving slowly across sky, Nov. 1, 1885, near Adrianople (*L'Astronomie,* 1886-309); large body, colored red, moving slowly, visible 15 minutes, reported by Coggia, Marseilles, Aug. 1, 1871 (*Chem. News,* 24-193); details of this observation, and similar observation by Guillemin, and other instances by de Fonville (*Comptes Rendus,* 73-297, 755); thing that was large and that was stationary twice in seven minutes, Oxford, Nov. 19, 1847; listed by Lowe (*Rec. Sci.,* 1-136); grayish object that looked to be about three and a half feet long, rapidly approaching the earth at Saarbruck, April 1, 1826; sound like thunder; object expanding like a sheet (*Am. Jour. Sci.,* 1-26-133; *Quar. Jour. Roy. Inst.*, 24-488); report by an astronomer, N. S. Drayton, upon an object duration of which seemed to him extraordinary; duration three-quarters of a minute, Jersey City, July 6, 1882 (*Sci. Amer.*, 47-53); object like a comet, but with proper motion of 10 degrees an hour; visible one hour; reported by Purine and Glancy from the Cordoba Observatory, Argentina, March 14, 1916 (*Sci. Amer.*, 115-493); something like a signal light, reported by Glaisher, Oct. 4, 1844; bright as Jupiter, "sending out quick flickering waves of light" (*Year Book of Facts,* 1845-278).

I think that with the object known as Eddie's "comet" passes away the last of our susceptibility to the common fallacy of personifying. It is one of

the most deep-rooted of positivist illusions— that people are persons. We have been guilty too often of spleens and spites and ridicules against astronomers, as if they were persons, or final unities, individuals, completenesses, or selves—instead of indeterminate parts. But, so long as we remain in quasi-existence, we can cast out illusion only with some other illusion, though the other illusion may approximate higher to reality. So we personify no more—but we super-personify. We now take into full acceptance our expression that Development is an Autocracy of Successive Dominants—which are not final—but which approximate higher to individuality or self-ness, than do the human tropisms that irresponsibly correlate to them.

Eddie reported a celestial object, from the Observatory at Grahamstown, South Africa. It was in 1890. The New Dominant was only heir presumptive then, or heir apparent but not obvious. The thing that Eddie reported might as well have been reported by a night watchman, who had looked up through an unplaced sewer pipe.

It did not correlate.

The thing was not admitted to *Monthly Notices.* I think myself that if the Editor had attempted to let it in—earthquake—or a mysterious fire in his publishing house.

The Dominants are jealous gods.

In *Nature,* presumably a vassal of the new god, though of course also plausibly rendering homage to the old, is reported a cornet-like body, of Oct. 27, 1890, observed at Grahamstown, by Eddie. It may have looked comet-like, but it moved 100 degrees while visible, or one hundred degrees in three-quarters of an hour. See *Nature,* 43-89, 90.

In *Nature,* 44-519, Prof. Copeland describes a similar appearance that he had seen, Sept. 10, 1891. Dreyer says (*Nature,* 44-541) that he had seen this object at the Armagh Observatory. He likens it to the object that was reported by Eddie. It was seen by Dr. Alexander Graham Bell, Sept. 11, 1891, in Nova Scotia.

But the Old Dominant was a jealous god.

So there were different observations upon something that was seen in November, 1883. These observations were Philistines in 1883. In the *Amer. Met. Jour.,* 1-110, a correspondent reports having seen an object like a comet, with two tails, one up and one down, Nov. 10 or 12, 1883. Very likely this phenomenon should be placed in our expression upon torpedo-

shaped bodies that have been seen in the sky—our data upon dirigibles, or super-Zeppelins—but our attempted classifications are far from rigorous—or are mere gropes. In the *Scientific American*, 50-40, a correspondent writes from Humacao, Porto Rico, that, Nov. 21, 1883, he and several other —persons—or persons, as it were—had seen a majestic appearance, like a comet. Visible three successive nights: disappeared then. The Editor says that he can offer no explanation. If accepted, this thing must have been close to the earth. If it had been a comet, it would have been seen widely, and the news would have been telegraphed over the world, says the Editor. Upon page 97 of this volume of the *Scientific American*, a correspondent writes that, at Sulphur Springs, Ohio, he had seen "a wonder in the sky," at about the same date. It was torpedo-shaped, or something with a nucleus, at each end of which was a tail. Again the Editor says that he can offer no explanation: that the object was not a comet. He associates it with the atmospheric effects general in 1883. But it will be our expression that, in England and Holland, a similar object was seen in November, 1882.

In the *Scientific American*, 40-294, is published a letter from Henry Harrison, of Jersey City, copied from the *New York Tribune:* that upon the evening of April 13, 1879, Mr. Harrison was searching for Brorsen's comet, when he saw an object that was moving so rapidly that it could not have been a comet. He called a friend to look, and his observation was confirmed. At two o'clock in the morning this object was still visible. In the *Scientific American Supplement*, 7-2885, Mr. Harrison disclaims sensationalism, which he seems to think unworthy, and gives technical details: he says that the object was seen by Mr. J. Spencer Devoe, of Manhattanville.

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"A FORMATION having the shape of a dirigible." It was reported from Huntington, West Virginia (*Sci. Amer.*, 115-241). Luminous object that was seen July 19, 1916, at about 11 P.M. Observed through "rather powerful field glasses," it looked to be about two degrees long and half a degree wide. It gradually dimmed, disappeared, reappeared, and then faded out of sight. Another person—as we say: it would be too inconvenient to hold to our intermediatist recognitions—another person who observed this phenomenon suggested to the writer of the account that the object was a dirigible, but the writer says that faint stars could be seen behind it. This would seem really to oppose our notion of a dirigible visitor to this earth—except for the inconclusiveness of all things in a mode of seeming that is not final—or we suggest that behind some parts of the object, thing, construction, faint stars were seen. We find a slight discussion here. Prof. H. M. Russell thinks that the phenomenon was a detached cloud of aurora borealis. Upon page 369 of this volume of the *Scientific American*, another correlator suggests that it was a light from a blast furnace—disregarding that, if there be blast furnaces in or near Huntington, their reflections would be commonplaces there.

We now have several observations upon cylindrical-shaped bodies that have appeared in this earth's atmosphere: cylindrical, but pointed at both ends, or torpedo-shaped. Some of the accounts are not very detailed, but out of the bits of description my own acceptance is that super-geographical routes are traversed by torpedo-shaped super-constructions that have occasionally visited, or that have occasionally been driven into this earth's atmosphere. From data, the acceptance is that upon entering this earth's atmosphere, these vessels have been so racked that had they not sailed away, disintegration would have occurred: that, before leaving this earth, they have, whether in attempted communication or not, or in mere wantonness or not, dropped objects, which did almost immediately violently disintegrate or explode. Upon general principles we think that explosives have not been purposely dropped, but that parts have been

racked off, and have fallen, exploding like the things called “ball lightning.” May have been objects of stone or metal with inscriptions upon them, for all we know, at present. In all instances, estimates of dimensions are valueless, but ratios of dimensions are more acceptable. A thing said to have been six feet long may have been six hundred feet long; but shape is not so subject to the illusions of distance.

Nature, 40-415:

That, Aug. 5, 1889, during a violent storm, an object that looked to be about 15 inches long and 5 inches wide, fell, rather slowly, at East Twickenham, England. It exploded. No substance from it was found.

L’Année Scientifique, 1864-54:

That, Oct. 10, 1864, M. Leverrier had sent to the Academy three letters from witnesses of a long luminous body, tapering at both ends, that had been seen in the sky.

In *Thunder and Lightning,* p. 87, Flammarion says that on Aug. 20, 1880, during a rather violent storm, M. A. Trécul, of the French Academy, saw a very brilliant yellowish-white body, apparently 35 to 40 centimeters long, and about 25 centimeters wide. Torpedo-shaped. Or a cylindrical body, “with slightly conical ends.” It dropped something, and disappeared in the clouds. Whatever it may have been that was dropped, it fell vertically, like a heavy object, and left a luminous train. The scene of this occurrence may have been far from the observer. No sound was heard. For M. Trécul’s account, see *Comptes Rendus,* 103-849.

Monthly Weather Review, 1907-310:

That, July 2, 1907, in the town of Burlington, Vermont, a terrific explosion had been heard throughout the city. A ball of light, or a luminous object, had been seen to fall from the sky—or from a torpedo-shaped thing, or construction, in the sky. No one had seen this thing that had exploded fall from a larger body that was in the sky—but if we accept that at the same time there was a larger body in the sky—

My own acceptance is that a dirigible in the sky, or a construction that showed every sign of disrupting, had barely time to drop— whatever it did drop—and to speed away to safety above.

The following story is told, in the *Review,* by Bishop John S. Michaud:

“I was standing on the corner of Church and College Streets, just in front of the Howard Bank, and facing east, engaged in conversation with Ex-Governor Woodbury and Mr. A. A. Buell, when, without the slightest

indication, or warning, we were startled by what sounded like a most unusual and terrific explosion, evidently very nearby. Raising my eyes, and looking eastward along College Street, I observed a torpedo-shaped body, some 300 feet away, stationary in appearance, and suspended in the air, about 50 feet above the tops of the buildings. In size it was about 6 feet long by 8 inches in diameter, the shell, or covering, having a dark appearance, with here and there tongues of fire issuing from spots on the surface, resembling red-hot, unburnished copper. Although stationary when first noticed, this object soon began to move, rather slowly, and disappeared over Dolan Brothers' store, southward. As it moved, the covering seemed rupturing in places, and through these the intensely red flames issued."

Bishop Michaud attempts to correlate it with meteorological observations.

Because of the nearby view this is perhaps the most remarkable of the new correlates, but the correlate now coming is extraordinary because of the great number of recorded observations upon it. My own acceptance is that, upon Nov. 17, 1882, a vast dirigible crossed England, but by the definiteness-indefinitness of all things quasi-real, some observations upon it can be correlated with anything one pleases.

E. W. Maunder, invited by the Editors of the *Observatory* to write some reminiscences for the 500th number of their magazine, gives one that he says stands out (*Observatory*, 39-214). It is upon something that he terms "a strange celestial visitor." Maunder was at the Royal Observatory, Greenwich, Nov. 17, 1882, at night. There was an aurora, without features of special interest. In the midst of the aurora, a great circular disk of greenish light appeared and moved smoothly across the sky. But the circularity was evidently the effect of foreshortening. The thing passed above the moon, and was, by other observers, described as "cigar-shaped," "like a torpedo," "a spindle," "a shuttle." The idea of foreshortening is not mine: Maunder says this. He says: "Had the incident occurred a third of a century later, beyond doubt everyone would have selected the same simile —it would have been 'just like a Zeppelin.'" The duration was about two minutes. Color said to have been the same as that of the auroral glow in the north. Nevertheless, Maunder says that this thing had no relation to auroral phenomena. "It appeared to be a definite body." Motion too fast for a cloud, but "nothing could be more unlike the rush of a meteor." In the *Philosophical Magazine*, 5-15-318, J. Rand Capron, in a lengthy paper,

alludes throughout to this phenomenon as an “auroral beam,” but he lists many observations upon its “torpedo-shape,” and one observation upon a “dark nucleus” in it—host of most confusing observations— estimates of height between 40 and 200 miles—observations in Holland and Belgium. We are told that according to Capron’s spectroscopic observations the phenomenon was nothing but a beam of auroral light. In the *Observatory,* 6-192, is Maunder’s contemporaneous account. He gives apparent approximate length and breadth at twenty-seven degrees and three degrees and a half. He gives other observations seeming to indicate structure —”remarkable dark marking down the center.”

In *Nature,* 27-84, Capron says that because of the moonlight he had been able to do little with the spectroscope.

Color white, but aurora rosy (*Nature,* 27-87).

Bright stars seen through it, but not at the zenith, where it looked opaque. This is the only assertion of transparency (*Nature,* 27-87). Too slow for a meteor, but too fast for a cloud (*Nature,* 27-86). “Surface had a mottled appearance” (*Nature,* 27-87). “Very definite in form, like a torpedo” (*Nature,* 27-100). “Probably a meteoric object” (Dr. Groneman, *Nature,* 27-296). Technical demonstration by Dr. Groneman, that it was a cloud of meteoric matter (*Nature,* 28-105). See *Nature,* 27-315, 338, 365, 388, 412, 434.

“Very little doubt it was an electric phenomenon” (Proctor, *Knowledge,* 2-419).

In the London *Times,* Nov. 20, 1882, the Editor says that he had received a great number of letters upon this phenomenon. He publishes two. One correspondent describes it as “well-defined and shaped like a fish . . . extraordinary and alarming.” The other correspondent writes of it as “a most magnificent luminous mass, shaped somewhat like a torpedo.”

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Notes and Queries, 5-3-306:

ABOUT 8 lights that were seen in Wales, over an area of about 8 miles, all keeping their own ground, whether moving together perpendicularly, horizontally, or over a zigzag course. They looked like electric lights—disappearing, reappearing dimly, then shining as bright as ever. "We have seen them three or four at a time afterward, on four or five occasions."

London *Times,* Oct. 5, 1877:

"From time to time the west coast of Wales seems to have been the scene of mysterious lights. . . . And now we have a statement from Towyn that within the last few weeks lights of various colors have been seen moving over the estuary of the Dysynni River, and out to sea. They are generally in a northerly direction, but sometimes they hug the shore, and move at high velocity for miles toward Aberdovey, and suddenly disappear.

L'Annee Scientifique, 1877-45:

Lights that appeared in the sky, above Vence, France, March 23, 1877; described as balls of fire of dazzling brightness; appeared from a cloud about a degree in diameter; moved relatively slowly. They were visible more than an hour, moving northward. It is said that eight or ten years before similar lights or objects had been seen in the sky, at Vence.

London *Times,* Sept. 19, 1848:

That, at Inverness, Scotland, two large, bright lights that looked like stars had been seen in the sky: sometimes stationary, but occasionally moving at high velocity.

L'Année Scientifique, 1888-66:

Observed near St. Petersburg, July 30, 1880, in the evening: a large spherical light and two smaller ones, moving along a ravine: visible three minutes; disappearing without noise.

Nature, 35-173:

That, at Yloilo, Sept. 30, 1886, was seen a luminous object the size of the full moon. It "floated" slowly "northward," followed by smaller ones close

to it.

"The False Lights of Durham."

Every now and then in the English newspapers, in the middle of the nineteenth century, there is something about lights that were seen against the sky, but as if not far above land, oftenest upon the coast of Durham. They were mistaken for beacons by sailors. Wreck after wreck occurred. The fishermen were accused of displaying false lights and profiting by wreckage. The fishermen answered that mostly only old vessels, worthless except for insurance, were so wrecked.

In 1866 (London *Times,* Jan. 9, 1866) popular excitement became intense. There was an investigation. Before a commission, headed by Admiral Collinson, testimony was taken. One witness described the light that had deceived him as "considerably elevated above ground." No conclusion was reached: the lights were called "the mysterious lights." But whatever the "false lights of Durham" may have been, they were unaffected by the investigation. In 1867, the Tyne Pilotage Board took the matter up. Opinion of the Mayor of Tyne—"a mysterious affair."

In the *Report of the British Association,* 1877-152, there is a description of a group of "meteors" that traveled with "remarkable slowness." They were in sight about three minutes. "Remarkable," it seems, is scarcely strong enough: one reads of "remarkable" as applied to a duration of three seconds. These "meteors" had another peculiarity; they left no train. They are described as "seemingly huddled together like a flock of wild geese, and moving with the same velocity and grace of regularity."

Jour. Roy. Astro. Soc. of Canada, November and December, 1913:

That, according to many observations collected by Prof. Chant, of Toronto, there appeared, upon the night of Feb. 9, 1913, a spectacle that was seen in Canada, the United States, and at sea, and in Bermuda. A luminous body was seen. To it there was a long tail. The body grew rapidly larger. "Observers differ as to whether the body was single, or was composed of three or four parts, with a tail to each part." The group, or complex structure, moved with "a peculiar, majestic deliberation." "It disappeared in the distance, and another group emerged from its place of origin. Onward they moved, at the same deliberate pace, in twos or threes or fours." They disappeared. A third group, or a third structure, followed.

Some observers compared the spectacle to a fleet of airships: others to battleships attended by cruisers and destroyers.

According to one writer:

"There were probably 30 or 32 bodies, and the peculiar thing about them was their moving in fours and threes and twos, abreast of one another; and so perfect was the lining up that you would have thought it was an aerial fleet maneuvering after rigid drilling."

Nature, May 25, 1893:

A letter from Capt. Charles J. Norcock, of H. M. S. *Caroline:*

That, upon the 24th of February, 1893, at 10 P.M., between Shanghai and Japan, the officer of the watch had reported "some unusual lights."

They were between the ship and a mountain. The mountain was about 6,000 feet high. The lights seemed to be globular. They moved sometimes massed, but sometimes strung out in an irregular line. They bore "northward," until lost to sight. Duration two hours.

The next night the lights were seen again.

They were, for a time, eclipsed by a small island. They bore north at about the same speed and in about the same direction as speed and direction of the *Caroline.* But they were lights that cast a reflection: there was a glare upon the horizon under them. A telescope brought out but few details: that they were reddish, and seemed to emit a faint smoke. This time the duration was seven and a half hours.

Then Capt. Norcock says that, in the same general locality, and at about the same time, Capt. Castle, of H. M. S. *Leander,* had seen lights. He had altered his course and had made toward them. The lights had fled from him. At least, they had moved higher in the sky.

Monthly Weather Review, March, 1904-115:

Report from the observations of three members of his crew by Lieut. Frank H. Schofield, U. S. N., of the U. S. S. *Supply:*

Feb. 24, 1904. Three luminous objects, of different sizes, the largest having an apparent area of about six suns. When first sighted, they were not very high. They were below clouds of an estimated height of about one mile.

They fled, or they evaded, or they turned.

They went up into the clouds below which they had, at first, been sighted.

Their unison of movement.

But they were of different sizes, and of different susceptibilities to all forces of this earth and of the air.

Monthly Weather Review, August, 1898-358:

Two letters from C. N. Crotsenburg, Crow Agency, Montana:

That, in the summer of 1896, when this writer was a railroad postal clerk —or one who was experienced in train-phenomena— while his train was going "northward," from Trenton, Mo., he and another clerk saw, in the darkness of a heavy rain, a light that appeared to be round, and of a dull-rose color, and seemed to be about a foot in diameter. It seemed to float within a hundred feet of the earth, but soon rose high, or "midway between horizon and zenith." The wind was quite strong from the east, but the light held a course almost due north.

Its speed varied. Sometimes it seemed to outrun the train "considerably." At other times it seemed to fall behind. The mail-clerks watched until the town of Linville, Iowa, was reached. Behind the depot of this town, the light disappeared, and was not seen again. All this time there had been rain, but very little lightning, but Mr. Crotsenburg offers the explanation that it was "ball lightning."

The Editor of the *Review* disagrees. He thinks that the light may have been a reflection from the rain, or fog, or from leaves of trees, glistening with rain, or the train's light—not lights.

In the December number of the *Review* is a letter from Edward M. Boggs —that the light was a reflection, perhaps, from the glare—one light, this time—from the locomotive's fire-box, upon wet telegraph wires—an appearance that might not be striated by the wires, but consolidated into one rotundity—that it had seemed to oscillate with the undulations of the wires, and had seemed to change horizontal distance with the varying angles of reflection, and had seemed to advance or fall behind, when the train had rounded curves.

All of which is typical of the best of quasi-reasoning. It includes and assimilates diverse data: but it excludes that which will destroy it:

That, acceptably, the telegraph wires were alongside the track beyond, as well as leading to Linville.

Mr. Crotsenburg thinks of "ball lightning," which, though a sore bewilderment to most speculation, is usually supposed to be a correlate with the old system of thought: but his awareness of "something else" is expressed in other parts of his letters, when he says that he has something to tell that is "so strange that I should never have mentioned it, even to my

friends, had it not been corroborated . . . so unreal that I hesitated to speak of it, fearing that it was some freak of the imagination."

27

VAST and black. The thing that was poised, like a crow over the moon.

Round and smooth. Cannon balls. Things that have fallen from the sky to this earth. Our slippery brains.

Things like cannon balls have fallen, in storms, upon this earth. Like cannon balls are things that, in storms, have fallen to this earth.

Showers of blood.

Showers of blood.

Showers of blood.

Whatever it may have been, something like red-brick dust, or a red substance in a dried state, fell at Piedmont, Italy, Oct. 27, 1814 (*Electric Magazine,* 68-437). A red powder fell, in Switzerland, winter of 1867 (*Pop. Sci. Rev.*, 10-112)—

That something, far from this earth, had bled—super-dragon that had rammed a comet—

Or that there are oceans of blood somewhere in the sky—substance that dries, and falls in a powder—wafts for ages in powdered form—that there is a vast area that will some day be known to aviators as the Desert of Blood. We attempt little of super-topography, at present, but Ocean of Blood, or Desert of Blood—or both—Italy is nearest to it—or to them.

I suspect that there were corpuscles in the substance that fell in Switzerland, but all that could be published in 1867 was that in this substance there was a high proportion of "variously shaped organic matter."

At Giessen, Germany, in 1821, according to the *Report of the British Association,* 5-2, fell a rain of a peach-red color. In this rain were flakes of a hyacinthine tint. It is said that this substance was organic: we are told that it was pyrrhine.

But distinctly enough, we are told of one red rain that it was of corpuscular composition—red snow, rather. It fell, March 12, 1876, near the Crystal Palace, London (*Year Book of Facts,* 1876-89; *Nature,* 13-414). As to the "red snow" of polar and mountainous regions, we have no opposition,

because that “snow” has never been seen to fall from the sky: it is a growth of micro-organisms, or of a “protococcus,” that spreads over snow that is on the ground. This time nothing is said of “sand from the Sahara.” It is said of the red matter that fell in London, March 12, 1876, that it was composed of corpuscles—

Of course:

That they looked like “vegetable cells.”

A note:

That nine days before had fallen the red substance—flesh—whatever it may have been—of Bath County, Kentucky.

I think that a super-egotist, vast, but not so vast as it had supposed, had refused to move to one side for a comet.

We summarize our general super-geographical expressions:

Gelatinous regions, sulphurous regions, frigid and tropical regions: a region that has been Source of Life relatively to this earth: regions wherein there is density so great that things from them, entering this earth’s thin atmosphere, explode.

We have had a datum of explosive hailstones. We now have support to the acceptance that they had been formed in a medium far denser than air of this earth at sea-level. In the *Popular Science News,* 22-38, is an account of ice that had been formed, under great pressure, in the laboratory of the University of Virginia. When released and brought into contact with ordinary air, this ice exploded.

And again the flesh-like substance that fell in Kentucky: its flake-like formation. Here is a phenomenon that is familiar to us: it suggests flattening, under pressure. But the extraordinary inference is— pressure not equal on all sides. In the *Annual Record of Science,* 1873-350, it is said that, in 1873, after a heavy thunderstorm in Louisiana, a tremendous number of fish scales were found, for a distance of forty miles, along the banks of the Mississippi River: bushels of them picked up in single places: large scales that were said to be of the gar fish, a fish that weighs from five to fifty pounds. It seems impossible to accept this identification: one thinks of a substance that had been pressed into flakes or scales. And round hailstones with wide thin margins of ice irregularly around them— still, such hailstones seem to me more like things that had been stationary: had been held in a field of thin ice. In the *Illustrated London News,* 34-546, are

drawings of hailstones so margined, as if they had been held in a sheet of ice.

Some day we shall have an expression which will be, to our advanced primitiveness, a great joy:

That devils have visited this earth: foreign devils: human-like beings, with pointed beards: good singers; one shoe ill-fitting—but with sulphurous exhalations, at any rate. I have been impressed with the frequent occurrence of sulphurousness with things that come from the sky. A fall of jagged pieces of ice, Orkney, July 24, 1818 (*Trans. Roy. Soc. Edin.*, 9-187). They had a strong sulphurous odor. And the coke—or the substance that looked like coke—that fell at Mortrée, France, April 24, 1887: with it fell a sulphurous substance. The enormous round things that rose from the ocean, near the *Vic-toria*. Whether we still accept that they were super-constructions that had come from a denser atmosphere and, in danger of disruption, had plunged into the ocean for relief, then rising and continuing on their way to Jupiter or Uranus—it was reported that they spread a "stench of sulphur." At any rate, this datum of proximity is against the conventional explanation that these things did not rise from the ocean, but rose far away above the horizon, with illusion of nearness.

And the things that were seen in the sky July, 1898: I have another note. In *Nature*, 58-224, a correspondent writes that, upon July 1, 1898, at Sedberg, he had seen in the sky—a red object—or, in his own wording, something that looked like the red part of a rainbow, about 10 degrees long. But the sky was dark at the time. The sun had set. A heavy rain was falling.

Throughout this book, the datum that we are most impressed with:

Successive falls.

Or that, if upon one small area, things fall from the sky, and then, later, fall again upon the same small area, they are not products of a whirlwind, which though sometimes axially stationary, discharges tangentially—

So the frogs that fell at Wigan. I have looked that matter up again. Later more frogs fell.

As to our data of gelatinous substance said to have fallen to this earth with meteorites, it is our expression that meteorites, tearing through the shaky, protoplasmic seas of Genesistrine—against which we warn aviators, or they may find themselves suffocating in a reservoir of life, or stuck like currants in a blanc mange—that meteorites detach gelatinous, or protoplasmic, lumps that fall with them.

Now the element of positiveness in our composition yearns for the appearance of completeness. Super-geographical lakes with fishes in them. Meteorites that plunge through these lakes, on their way to this earth. The positiveness in our make-up must have expression in at least one record of a meteorite that has brought down a lot of fishes with it—

Nature, 3-512:

That, near the bank of a river, in Peru, Feb. 4, 1871, a meteorite fell. "On the spot, it is reported, several dead fishes were found, of different species." The attempt to correlate is—that the fishes "are supposed to have been lifted out of the river and dashed against the stones."

Whether this be imaginable or not depends upon each one's own hypnoses.

Nature, 4-169:

That the fishes had fallen among the fragments of the meteorite.

Popular Science Review, 4-126:

That one day, Mr. Le Gould, an Australian scientist, was traveling in Queensland. He saw a tree that had been broken off close to the ground. Where the tree had been broken was a great bruise. Near by was an object that "resembled a ten-inch shot."

A good many pages back there was an instance of overshadowing, I think. The little carved stone that fell at Tarbes is my own choice as the most impressive of our new correlates. It was coated with ice, remember. Suppose we should sift and sift and discard half the data in this book—suppose only that one datum should survive. To call attention to the stone of Tarbes would, in my opinion, be doing well enough, for whatever the spirit of this book is trying to do. Nevertheless, it seems to me that a datum that preceded it was slightingly treated.

The disk of quartz, said to have fallen from the sky, after a meteoric explosion:

Said to have fallen at the plantation Bleijendal, Dutch Guiana: sent to the Museum of Leyden by M. van Sypesteyn, adjutant to the Governor of Dutch Guiana (*Notes and Queries*, 2-8-92).

And the fragments that fall from super-geographic ice fields: flat pieces of ice with icicles on them. I think that we did not emphasize enough that, if these structures were not icicles, but crystalline protuberances, such crystalline formations indicate long suspension quite as notably as would icicles. In the *Popular Science News*, 24-34, it is said that in 1869, near

Tiflis, fell large hailstones with long protuberances. “The most remarkable point in connection with the hailstones is the fact that, judging from our present knowledge, a very long time must have been occupied in their formation.” According to the *Geological Magazine,* 7-27, this fall occurred May 27, 1869. The writer in the *Geological Magazine* says that of all theories that he had ever heard of, not one could give him light as to this occurrence—”these growing crystalline forms must have been suspended a long time”—

Again and again this phenomenon:

Fourteen days later, at about the same place, more of these hailstones fell.

Rivers of blood that vein albuminous seas, or an egg-like composition in the incubation of which this earth is a local center of development—that there are super-arteries of blood in Genesistrine: that sunsets are consciousness of them: that they flush the skies with northern lights sometimes: super-embryonic reservoirs from which life-forms emanate—

Or that our whole solar system is a living thing: that showers of blood upon this earth are its internal hemorrhages—

Or vast living things in the sky, as there are vast living things in the oceans—

Or some one especial thing: an especial time: an especial place. A thing the size of the Brooklyn Bridge. It’s alive in outer space—something the size of Central Park kills it—

It drips.

We think of the ice fields above this earth: which do not, themselves, fall to this earth, but from which water does fall—

Popular Science News, 35-104:

That, according to Prof. Luigi Palazzo, head of the Italian Meteorological Bureau, upon May 15, 1890, at Messignadi, Calabria, something the color of fresh blood fell from the sky.

This substance was examined in the public-health laboratories of Rome.

It was found to be blood.

“The most probable explanation of this terrifying phenomenon is that migratory birds (quails or swallows) were caught and torn in a violent wind.”

So the substance was identified as birds’ blood—

What matters it what the microscopists of Rome said—or had to say—and what matters it that we point out that there is no assertion that there was

a violent wind at the time—and that such a substance would be almost infinitely dispersed in a violent wind— that no bird was said to have fallen from the sky—or said to have been seen in the sky—that not a feather of a bird is said to have been seen—

This one datum:

The fall of blood from the sky—

But later, in the same place, blood again fell from the sky.

28

Notes and Queries, 7-8-508:

A CORRESPONDENT who had been to Devonshire writes for information as to a story that he had heard there: of an occurrence of about thirty-five years before the date of writing:

Of snow upon the ground—of all South Devonshire waking up one morning to find such tracks in the snow as had never before been heard of —"clawed footmarks" or "an unclassifiable form"— alternating at huge but regular intervals with what seemed to be the impression of the point of a stick—but the scattering of the prints—amazing expanse of territory covered—obstacles, such as hedges, walls, houses, seemingly surmounted —

Intense excitement—that the track had been followed by huntsmen and hounds, until they had come to a forest—from which the hounds had retreated, baying and terrified, so that no one had dared to enter the forest.

Notes and Queries, 7-9-18:

Whole occurrence well-remembered by a correspondent: a badger had left marks in the snow: this was determined, and the excitement had "dropped to a dead calm in a single day."

Notes and Queries, 7-9-70:

That for years a correspondent had had a tracing of the prints, which his mother had taken from those in the snow in her garden, in Exmouth: that they were hoof-like marks—but had been made by a biped.

Notes and Queries, 7-9-253:

Well remembered by another correspondent, who writes of the excitement and consternation of "some classes." He says that a kangaroo had escaped from a menagerie—"the footprints being so peculiar and far apart gave rise to a scare that the devil was loose."

We have had a story, and now we shall tell it over from contemporaneous sources. We have had the later accounts first very largely for an impression of the correlating effect that time brings about, by addition, disregard and distortion. For instance, the "dead calm in a single day." If I had found that

the excitement did die out rather soon, I'd incline to accept that nothing extraordinary had occurred.

I found that the excitement had continued for weeks.

I recognize this as a well-adapted thing to say, to divert attention from a discorrelate.

All phenomena are "explained" in the terms of the Dominant of their era. This is why we give up trying really to explain, and content ourselves with expressing. Devils that might print marks in snow are correlates to the third Dominant back from this era. So it was an adjustment by nineteenth-century correlates, or human tropisms, to say that the marks in the snow were clawed. Hoof-like marks are not only horsey but devilish. It had to be said in the nineteenth century that those prints showed claw-marks. We shall see that this was stated by Prof. Owen, one of the greatest biologists of his day —except that Darwin didn't think so. But I shall give reference to two representations of them that can be seen in the New York Public Library. In neither representation is there the faintest suggestion of a claw-mark. There never has been a Prof. Owen who has explained: he has correlated.

Another adaptation, in the later accounts, is that of leading this discorrelate to the Old Dominant into the familiar scenery of a fairy story, and discredit it by assimilation to the conventionally fictitious—so the idea of the baying, terrified hounds, and forest like enchanted forests, which no one dared to enter. Hunting parties were organized, but the baying, terrified hounds do not appear in contemporaneous accounts.

The story of the kangaroo looks like adaptation to needs for an animal that could spring far, because marks were found in the snow on roofs of houses. But so astonishing is the extent of snow that was marked that after a while another kangaroo was added.

But the marks were in single lines.

My own acceptance is that not less than a thousand one-legged kangaroos, each shod with a very small horseshoe, could have marked that snow of Devonshire.

London *Times*, Feb 16, 1855:

"Considerable sensation has been caused in the towns of Topsham, Lymphstone, Exmouth, Teignmouth, and Dawlish, in Devonshire, in consequence of the discovery of a vast number of foot tracks of a most strange and mysterious description."

The story is of an incredible multiplicity of marks discovered in the morning of Feb. 8, 1855, in the snow, by the inhabitants of many towns and regions between towns. This great area must of course be disregarded by Prof. Owen and the other correlators. The tracks were in all kinds of unaccountable places: in gardens enclosed by high walls, and up on the tops of houses, as well as in the open fields. There was in Lymphstone scarcely one unmarked garden. We've had heroic disregards but I think that here disregard was titanic. And, because they occurred in single lines, the marks are said to have been "more like those of a biped than of a quadruped" —as if a biped would place one foot precisely ahead of another— unless it hopped—but then we have to think of a thousand, or of thousands.

It is said that the marks were "generally 8 inches in advance of each other."

"The impression of the foot closely resembles that of a donkey's shoe, and measured from an inch and a half, in some instances, to two and a half inches across."

Or the impressions were cones in incomplete, or crescentic basins.

The diameters equaled diameters of very young colts' hoofs: too small to be compared with marks of donkey's hoofs.

"On Sunday last the Rev. Mr. Musgrave alluded to the subject in his sermon and suggested the possibility of the footprints being those of a kangaroo, but this could scarcely have been the case, as they were found on both sides of the Este. At present it remains a mystery, and many superstitious people in the above-named towns are actually afraid to go outside their doors after night."

The Este is a body of water two miles wide.

London *Times*, March 6, 1855:

"The interest in this matter has scarcely yet subsided, many inquiries still being made into the origin of the footprints, which caused so much consternation upon the morning of the 8th ult. In addition to the circumstances mentioned in the *Times* a little while ago, it may be stated that at Dawlish a number of persons sallied out, armed with guns and other weapons, for the purpose, if possible, of discovering and destroying the animal which was supposed to have been so busy in multiplying its footprints. As might have been expected, the party returned as they went. Various speculations have been made as to the cause of the footprints. Some have asserted that they are those of a kangaroo, while others affirm that they

are the impressions of claws of large birds driven ashore by stress of weather. On more than one occasion reports have been circulated that an animal from a menagerie had been caught, but the matter at present is as much involved in mystery as ever it was."

In the *Illustrated London News*, the occurrence is given a great deal of space. In the issue of Feb. 24, 1855, a sketch is given of the prints.

I call them cones in incomplete basins.

Except that they're a little longish, they look like prints of hoofs of horses—or, rather, of colts.

But they're in a single line.

It is said that the marks from which the sketch was made were 8 inches apart, and that this spacing was regular and invariable "in every parish." Also other towns besides those named in the *Times* are mentioned. The writer, who had spent a winter in Canada, and was familiar with tracks in snow, says that he had never seen "a more clearly defined track." Also he brings out the point that was so persistently disregarded by Prof. Owen and the other correlators —that "no known animal walks in a line of single footsteps, not even man." With these wider inclusions, this writer concludes with us that the marks were not footprints. It may be that his following observation hits upon the crux of the whole occurrence:

That whatever it may have been that had made the marks, it had removed, rather than pressed, the snow.

According to his observations the snow looked "as if branded with a hot iron."

Illustrated London News, March 3, 1855-214:

Prof. Owen, to whom a friend had sent drawings of the prints, writes that there were claw-marks. He says that the "track" was made by "a" badger.

Six other witnesses sent letters to this number of the *News.* One mentioned, but not published, is a notion of a strayed swan. Always this homogeneous-seeing—"a" badger—"a" swan—"a" track. I should have listed the other towns as well as those mentioned in the *Times.*

A letter from Mr. Musgrave is published. He, too, sends a sketch of the prints. It, too, shows a single line. There are four prints, of which the third is a little out of line.

There is no sign of a claw-mark.

The prints look like prints of longish hoofs of a very young colt, but they are not so definitely outlined as in the sketch of February 24th, as if drawn

after disturbance by wind, or after thawing had set in. Measurements at places a mile and a half apart, gave the same inter-spacing—"exactly eight inches and a half apart."

We now have a little study in the psychology and genesis of an attempted correlation. Mr. Musgrave says: "I found a very apt opportunity to mention the name 'kangaroo' in allusion to the report then current." He says that he had no faith in the kangaroo-story himself, but was glad "that a kangaroo was in the wind," because it opposed "a dangerous, degrading, and false impression that it was the devil."

"Mine was a word in season and did good."

Whether it's Jesuitical or not, and no matter what it is or isn't, that is our own acceptance: that, though we've often been carried away from this attitude controversially, that is our acceptance as to every correlate of the past that has been considered in this book— relatively to the Dominant of its era.

Another correspondent writes that, though the prints in all cases resembled hoof marks, there were indistinct traces of claws—that "an" otter had made the marks. After that many other witnesses wrote to the *News*. The correspondence was so great that, in the issue of March 10th, only a selection could be given. There's "a" jumping-rat solution and "a" hopping-toad inspiration, and then someone came out strong with an idea of "a" hare that had galloped with pairs of feet held close together, so as to make impressions in a single line.

London *Times*, March 14, 1840:

"Among the high mountains of that elevated district where Glenorchy, Glenlyon and Glenochay are contiguous, there have been met with several times, during this and also the former winter, upon the snow, the tracks of an animal seemingly unknown at present in Scotland. The print, in every respect, is an exact resemblance to that of a foal of considerable size, with this small difference, perhaps, that the sole seems a little longer, or not so round; but as no one has had the good fortune as yet to have obtained a glimpse of this creature, nothing more can be said of its shape or dimensions; only it has been remarked, from the depth to which the feet sank in the snow, that it must be a beast of considerable size. It has been observed also that its walk is not like that of the generality of quadrupeds, but that it is more like the bounding or leaping of a horse when scared or

pursued. It is not in one locality that its tracks have been met with, but through a range of at least twelve miles."

In the *Illustrated London News*, March 17, 1855, a correspondent from Heidelberg writes, "upon the authority of a Polish Doctor of Medicine," that on the Piashowa-gora (Sand Hill) a small elevation on the border of Galicia, but in Russian Poland, such marks are to be seen in the snow every year, and sometimes in the sand of this hill, and "are attributed by the inhabitants to supernatural influences."

NEW LANDS

PART I

1

LANDS in the sky—
That they are nearby—
That they do not move.

I take for a principle that all being is the infinitely serial, and that whatever has been will, with differences of particulars, be again—

The last quarter of the fifteenth century—land to the west!

This first quarter of the twentieth century—we shall have revelations.

There will be data. There will be many. Behind this book, unpublished collectively, or held as constituting its reserve forces, there are other hundreds of data, but independently I take for a principle that all existence is a flux and a re-flux, by which periods of expansion follow periods of contraction; that few men can even think widely when times are narrow times, but that human constrictions cannot repress extensions of thoughts and lives and enterprise and dominion when times are wider times—so then that the pageantry of foreign coasts that was revealed behind blank horizons after the year 1492, cannot be, in the course of development, the only astounding denial of seeming vacancy—that the spirit, or the animation, and the stimulations and the needs of the fifteenth century are all appearing again, and that requital may appear again—

Aftermath of war, as in the year 1492: demands for readjustments; crowded and restless populations, revolts against limitations, intolerable restrictions against emigrations. The young man is no longer urged, or is no longer much inclined, to go westward. He will, or must, go somewhere. If directions alone no longer invite him, he may hear invitation in dimensions. There are many persons, who have not investigated for themselves, who think that both poles of this earth have been discovered. There are too many women traveling luxuriously in “Darkest Africa.” Eskimos of Disco, Greenland, are publishing a newspaper. There must be outlet, or there will be explosion—

Outlet and invitation and opportunity—

San Salvadors of the Sky—a Plymouth Rock that hangs in the heavens of Servia—a foreign coast from which storms have brought materials to the city of Birmingham, England.

Or the mentally freezing, or dying, will tighten their prohibitions, and the chill of their censorships will contract, to extinction, our lives, which, without sin, represent matter deprived of motion. Their ideal is Death, or approximate death, warmed over occasionally only enough to fringe with uniform, decorous icicles—from which there will be no escape, if, for the living and sinful and adventurous there be not San Salvadors somewhere else, a Plymouth Rock of reversed significance, coasts of sky-continents.

But every consciousness that we have of needs, and all hosts, departments, and sub-divisions of data that indicate the possible requital of needs are opposed—not by the orthodoxy of the common Puritans, but by the Puritans of Science, and their austere, disheartening, dried or frozen orthodoxy.

Islands of space—see *Sci. Amer.*, vol. this and p. that—accounts from the *Repts. of the Brit. Assoc. for the Ad. of Sci.—Nature*, etc.—except for an occasional lapse, our sources of data will not be sneered at. As to our interpretations, I consider them, myself, more as suggestions and gropings and stimuli. Islands of space and the rivers and the oceans of an extra-geography—

Stay and let salvation damn you—or straddle an auroral beam and paddle from Rigel to Betelgeuse. If there be no accepting that there are such rivers and oceans beyond this earth, stay and travel upon steamships with schedules that can be depended upon, food so well cooked and well served, comfort looked after so carefully— or some day board the thing that was seen over the city of Marseilles, Aug. 19, 1887, and ride on that, bearing down upon the moon, giving up for lost, escaping collision by the swirl of a current that was never heard of before.

There are, or there are not, nearby cities of foreign existences. They have, or they have not, been seen, by reflection, in the skies, of Sweden and Alaska. As one will. Whether acceptable, or too preposterous to be thought of, our data are of rabbles of living things that have been seen in the sky; also of processions of military beings—monsters that live in the sky and die in the sky, and spatter this earth with their red life-fluids—ships from other worlds that have been seen by millions of the inhabitants of this earth,

exploring, night after night, in the sky of France, England, New England, and Canada—signals from the moon, which, according to notable indications, may not be so far from this earth as New York is from London —definitely reported and, in some instances, multitudinously witnessed, events that have been disregarded by our opposition—

A scientific priestcraft—

"Thou shalt not!" is crystallized in its frozen textbooks.

I have data upon data upon data of new lands that are not far away. I hold out expectations and the materials of new hopes and new despairs and new triumphs and new tragedies. I hold out my hands to point to the sky—there is a hierarchy that utters me manacles, I think—there is a dominant force that pronounces prisons that have dogmas for walls for such thoughts. It binds its formulas around all attempting extensions.

But sounds have been heard in the sky. They have been heard, and it is not possible to destroy the records of them. They have been heard. In their repetitions and regularities of series and intervals, we shall recognize perhaps interpretable language. Columns of clouds, different-colored by sunset, have vibrated to the artillery of other worlds like the strings of a cosmic harp, and I conceive of no buzzing of insects that can forever divert attention from such dramatic reverberations. Language has shone upon the dark parts of the moon: luminous exclamations that have fluttered in the lunar crater Copernicus; the eloquence of the starlike light in Aristarchus; hymns that have been chanted in lights and shades upon Linné; the wilder, luminous music in Plato—

But not a sound that has been heard in the sky, not a thing that has fallen from the sky, not a thing that "should not be," but that has nevertheless been seen in the sky can we, with any sense of freedom, investigate, until first we find out about the incubus that in the past has suffocated even speculation. I shall find out for myself: anybody who cares to may find out with me. A ship from a foreign world does, or does not, sail in the sky of this earth. It is in accordance with observations by hundreds of thousands of witnesses that this event has taken place, and, if the time be when aeronautics upon this earth is of small development, that is an important circumstance to consider —but there is suffocation upon the whole occurrence and every one of its circumstances. Nobody can give good attention to the data, if diverting his mind is consciousness, altogether respectful, of the scientists who say that there are no other physical worlds except planets, millions of miles away,

distances that conceivable vessels could not traverse. I should like to let loose, in an opening bombardment, the data of the little black stones of Birmingham, which, time after time, in a period of eleven years, fell obviously from a fixed point in the sky, but such a release, now, would be wasted. It will have to be prepared for. Now each one would say to himself that there are no such fixed points in the sky. Why not? Because astronomers say that there are not.

But there is something else that is implied. Implied is the general supposition that the science of astronomy represents all that is most accurate, most exacting, painstaking, semi-religious in human thought, and is therefore authoritative.

Anybody who has not been through what I've been through, in investigating this subject, would ask what are the bases and what is the consistency of the science of astronomy. The miserable, though at times amusing, confusions of thought that I find in this field of supposed research word my inquiry differently—what of dignity, or even of decency, is in it?

Phantom dogmas, with their tails clutching at vacancies, are coiled around our data.

Serpents of pseudo-thought are stifling history.

They are squeezing "Thou shalt not!" upon Development.

New Lands—and the horrors and lights, explosions and music of them; rabbles of hellhounds and the march of military angels. But they are Promised Lands, and first must we traverse a desert. There is ahead of us a waste of parallaxes and spectrograms and triangulations. It may be weary going through a waste of astronomic determinations, but that depends—

If out of a dreary, academic zenith shower betrayals of frailty, folly, and falsification, they will be manna to our malices—

Or sterile demonstrations be warmed by our cheerful cynicisms into delicious little lies—blossoms and fruits of unexpected oases—

Rocks to strike with our suspicions—and the gush of exposures foaming with new implications.

Tyrants, dragons, giants—and, if all be dispatched with the skill and the might and the triumph over awful odds of the hero who himself tells his story—

I hear three yells from some hitherto undiscovered, grotesque critter at the very entrance of the desert.

2

"PREDICTION Confirmed!"

"Another Verification!"

"A Third Verification of Prediction!"

Three times, in spite of its long-established sobriety, the *Journal of the Franklin Institute*, vols. 106 and 107, reels with an astronomer's exhilarations. He might exult and indulge himself, and that would be no affair of ours, and, in fact, we'd like to see everybody happy, perhaps, but it is out of these three chanticleerities by Prof. Pliny Chase that we materialize our opinion that, so far as methods and strategies are concerned, no particular differences can be noted between astrologers and astronomers, and that both represent engulfment in Dark Ages. Lord Bacon pointed out that the astrologers had squirmed into prestige and emolument by shooting at marks, disregarding their misses, and recording their hits with unseemly advertisement. When, in August, 1878, Prof. Swift and Prof. Watson said that, during an eclipse of the sun, they had seen two luminous bodies that might be planets between Mercury and the sun, Prof. Chase announced that, five years before, he had made a prediction, and that it had been confirmed by the positions of these bodies. Three times, in capital letters, he screamed, or announced, according to one's sensitiveness, or prejudices, that the "new planets" were in the exact positions of his calculations. Prof. Chase wrote that, before his time, there had been two great instances of astronomic calculation confirmed: the discovery of Neptune and the discovery of "the asteroidal belt," a claim that is disingenuously worded. If by mathematical principles, or by any other definite principles, there has ever been one great, or little, instance of astronomic discovery by means of calculations, confusion must destroy us, in the introductory position that we take, or expose our irresponsibility, and vitiate all that follows: that our data are oppressed by a tyranny of false announcements; that there never has been an astronomic discovery other than the observational or the accidental.

In *The Story of the Heavens*, Sir Robert Ball's opinion of the discovery of Neptune is that it is a triumph unparalleled in the annals of science. He

lavishes—the great astronomer Leverrier, buried for months in profound meditations—the dramatic moment —Leverrier rises from his calculations and points to the sky—"Lo!" there a new planet is found.

My desire is not so much to agonize over the single fraudulencies or delusions, as to typify the means by which the science of Astronomy has established and maintained itself:

According to Leverrier, there was a planet external to Uranus; according to Hansen, there were two; according to Airy, "doubtful if there were one."

One planet was found—so calculated Leverrier, in his profound meditations. Suppose two had been found—confirmation of the brilliant computations by Hansen. None—the opinion of the great astronomer, Sir George Airy.

Leverrier calculated that the hypothetic planet was at a distance from the sun, within the limits of 35 and 37.9 times this earth's distance from the sun. The new planet was found in a position said to be 30 times this earth's distance from the sun. The discrepancy was so great that, in the United States, astronomers refused to accept that Neptune had been discovered by means of calculation: see such publications as the *American Journal of Science*, of the period. Upon Aug. 29, 1849, Dr. Babinet read, to the French Academy, a paper in which he showed that, by the observations of three years, the revolution of Neptune would have to be placed at 165 years. Between the limits of 207 and 233 years was the period that Leverrier had calculated. Simultaneously, in England, Adams had calculated. Upon Sept. 2, 1846, after he had, for at least a month, been charting the stars in the region toward which Adams had pointed, Prof. Challis wrote to Sir George Airy that this work would occupy his time for three more months. This indicates the extent of the region toward which Adams had pointed.

The discovery of the asteroids, or in Prof. Chase's not very careful language, the discovery of the "asteroidal belt as deduced from Bode's Law":

We learn that Baron Von Zach had formed a society of twenty-four astronomers to search, in accordance with Bode's Law, for "a planet"—and not "a group," not "an asteroidal belt"—between Jupiter and Mars. The astronomers had organized, dividing the zodiac into twenty-four zones, assigning each zone to an astronomer. They searched. They found not one asteroid. Seven or eight hundred are now known.

Philosophical Magazine, 12-62:

That Piazzi, the discoverer of the first asteroid, had not been searching for a hypothetic body, as deduced from Bode's Law, but, upon an investigation of his own, had been charting stars in the constellation Taurus, night of Jan. 1, 1801. He noticed a light that he thought had moved, and, with his mind a blank, so far as asteroids and brilliant deductions were concerned, announced that he had discovered a comet.

As an instance of the crafty way in which some astronomers now tell the story, see Sir Robert Ball's *Story of the Heavens,* p. 230:

The organization of the astronomers of Lilienthal, but never a hint that Piazzi was not one of them—"the search for a small planet was soon rewarded by a success that has rendered the evening of the first day of the nineteenth century memorable in astronomy." Ball tells of Piazzi's charting of the stars, and makes it appear that Piazzi had charted stars as a means of finding asteroids deductively, rewarded soon by success, whereas Piazzi had never heard of such a search, and did not know an asteroid when he saw one. "This laborious and accomplished astronomer had organized an ingenious system of exploring the heavens, which was eminently calculated to discriminate a planet among the starry host . . . at length he was rewarded by a success which amply compensated him for all his toil."

Prof. Chase—these two great instances not of mere discovery, but of discovery by means of calculation, according to him—now the subject of his supposition that he, too, could calculate triumphantly— the verification depended upon the accuracy of Prof. Swift and Prof. Watson in recording the positions of the bodies that they had announced—

Sidereal Messenger, 6-84:

Prof. Colbert, Superintendent of Dearborn Observatory, leader of the party of which Prof. Swift was a member, says that the observations by Swift and Watson agreed, because Swift had made his observations agree with Watson's. The accusation is not that Swift had falsely announced a discovery of two unknown bodies, but that his precise determining of positions had occurred after Watson's determinations had been published.

Popular Astronomy, 7-13:

Prof. Asaph Hall writes that, several days after the eclipse, Prof. Watson told him that he had seen "a" luminous body near the sun, and that his declaration that he had seen two unknown bodies was not made until after Swift had been heard from.

Perched upon two delusions, Prof. Chase crowed his false raptures. The unknown bodies, whether they ever had been in the orbit of his calculations or not, were never seen again.

So it is our expression that hosts of astronomers calculate, and calculation-mad, calculate and calculate and calculate, and that, when one of them does point within 600,000,000 miles (by conventional measurements) of something that is found, he is the Leverrier of the text-books; that the others are the Prof. Chases not of the text-books.

As to most of us, the symbols of the infinitesimal calculus humble independent thinking into the conviction that used to be enforced by drops of blood from a statue. In the farrago and conflicts of daily lives, it is relief to feel such a *rapport* with finality, in a religious sense, or in a mathematical sense. So then, if the seeming of exactness in Astronomy be either infamously, or carelessly and laughingly, brought about by the connivances of which Swift and Watson were accused, and if the prestige of Astronomy be founded upon nothing but huge capital letters and exclamation points, or upon the disproportionality of balancing one Leverrier against hundreds of Chases, it may not be better that we should know this, if then to those of us who, in the religious sense, have nothing to depend upon, comes deprivation of even this last, lingering seeming of foundation, or seeming existence of exactness and realness, somewhere—

Except—that, if there be nearby lands in the sky and beings from foreign worlds that visit this earth, that is a great subject, and the trash that is clogging an epoch must be cleared away.

We have had a little sermon upon the insecurity of human triumphs, and, having brought it to a climax, now seems to be the time to stop; but there is still an involved “triumph” and I’d not like to have inefficiency, as well as probably everything else, charged against us—

The Discovery of Uranus.

We mention this stimulus to the text-book writers’ ecstasies, because out of phenomena of the planet Uranus, the “Neptune-triumph” developed. For Richard Proctor’s reasons for arguing that this discovery was not accidental, see *Old and New Astronomy,* p. 646. *Philosophical Transactions,* 71-492—a paper by Herschel— “An account of a comet discovered on March 13, 1781.” A year went by, and not an astronomer in the world knew a new planet when he saw one: then Lexell did find out that the supposed comet was a planet.

Statues from which used to drip the life-blood of a parasitic cult—

Structures of parabolas from which bleed equations—

As we go along we shall develop the acceptance that astronomers might as well try to squeeze blood from images as to try to seduce symbols into conclusions, because applicable mathematics has no more to do with planetary inter-actions than have statues of saints. If this denial that the calculi have place in gravitational astronomy be accepted, the astronomers lose their supposed god; they become an unfocused priesthood; the stamina of their arrogance wilts. We begin with the next to the simplest problem in celestial mechanics: that is, the formulation of the inter-actions of the sun and the moon and this earth. In the highest of mathematics, final, sacred mathematics, can this next to the simplest problem in so-called mathematical astronomy be solved?

It cannot be solved.

Every now and then, somebody announces that he has solved the Problem of the Three Bodies, but it is always an incomplete, or impressionistic, demonstration, compounded of abstractions, and ignoring the conditions of bodies in space. Over and over we shall find vacancy under supposed achievements; elaborate structures that are pretensions without foundation. Here we learn that astronomers cannot formulate the inter-actions of three bodies in space, but calculate anyway, and publish what they call the formula of a planet that is inter-acting with a thousand other bodies. They explain. It will be one of our most lasting impressions of astronomers: they explain and explain and explain. The astronomers explain that, though in finer terms, the mutual effects of three planets cannot be determined, so dominant is the power of the sun that all other effects are negligible.

Before the discovery of Uranus, there was no way by which the miracles of the astro-magicians could be tested. They said that their formulas worked out, and external inquiry was panic-stricken at the mention of a formula. But Uranus was discovered, and the magicians were called upon to calculate his path. They did calculate, and, if Uranus had moved in a regular path, I do not mean to say that astronomers or college boys have no mathematics by which to determine anything so simple.

They computed the orbit of Uranus.

He went somewhere else.

They explained. They computed some more. They went on explaining and computing, year in and year out, and the planet Uranus kept on going somewhere else. Then they conceived of a powerful perturbing force beyond Uranus—so then that at the distance of Uranus the sun is not so dominant—in which case the effects of Saturn upon Uranus and Uranus upon Saturn are not so negligible—on through complexes of inter-actions that infinitely intensify by cumulativeness into a black outlook for the whole brilliant system. The palæo-astronomers calculated, and for more than fifty years pointed variously at the sky. Finally two of them, of course agreeing upon the general background of Uranus, pointed within distances that are conventionally supposed to have been about six hundred millions of miles of Neptune, and now it is religiously, if not insolently, said that the discovery of Neptune was not accidental—

That the test of that which is not accidental is ability to do it again—

That it is within the power of anybody, who does not know a hyperbola from a cosine, to find out whether the astronomers are led by a cloud of rubbish by day and a pillar of bosh by night—

If, by the magic of his mathematics, any astronomer could have pointed to the position of Neptune, let him point to the planet past Neptune. According to the same reasoning by which a planet past Uranus was supposed to be, a Trans-Neptunian planet may be supposed to be. Neptune shows perturbations similar to those of Uranus.

According to Prof. Todd there is such a planet, and it revolves around the sun once in 375 years. There are two, according to Prof. Forbes, one revolving once in 1,000 years, and the other once in 5,000 years. See Macpherson's *A Century's Progress in Astronomy.* It exists, according to Dr. Eric Doolittle, and revolves once in 283 years (*Sci. Amer.,* 122-641). According to Mr. Hind it revolves once in 1,600 years (*Smithson. Miscell. Cols.*, 20-20).

So then we have found out some things, and, relatively to the oppressions that we felt from our opposition, they are reassuring. But also are they depressing. Because, if, in this existence of ours, there is no prestige higher than that of astronomic science, and, if that seeming of substantial renown has been achieved by a composition of bubbles, what of anything like soundness must there be to all lesser reputes and achievements?

Let three bodies inter-act. There is no calculus by which their inter-actions can be formulated. But there are a thousand inter-acting bodies in

this solar system—or supposed solar system—and we find that the highest prestige in our existence is built upon the tangled assertions that there are magicians who can compute in a thousand quantities, though they cannot compute in three.

Then all other so-called human triumphs, or moderate successes, products of anybody's reasoning processes and labors—and what are they, if higher than them all, more academic, austere, rigorous, exact are the methods and the processes of the astronomers? What can be thought of our whole existence, its nature and its destiny ?

That our existence, a thing within one solar system, or supposed solar system, is a stricken thing that is mewling through space, shocking able-minded, healthy systems with the sores on its sun, its ghastly moons, its civilizations that are all broken out with sciences; a celestial leper, holding out doddering expanses into which charitable systems drop golden comets? If it be the leprous thing that our findings seem to indicate, there is no encouragement for us to go on. We cannot discover: we can only betray new symptoms. If I be a part of such a stricken thing, I know of nothing but sickness and sores and rags to reason with: my data will be pustules; my interpretations will be inflammations—

3

SOUTHERN plantations and the woolly heads of Negroes pounding the ground—cries in northern regions and round white faces turned to the sky—fiery globes in the sky—a study in black, white, and golden formations in one general glow. Upon the night of Nov. 13-14, 1833, occurred the most sensational celestial spectacle of the nineteenth century: for six hours fiery meteors gushed from the heavens, and were visible along the whole Atlantic coast of the United States.

One supposes that astronomers do not pound the ground with their heads, and presumably they do not screech, but they have feelings just the same. They itched. Here was something to formulate. When he hears of something new and unquestionable in the sky, an astronomer is diseased with ill-suppressed equations. Symbols persecute him for expression. His is the frenzy of someone who would stop automobiles, railroad trains, bicycles, all things, to measure them; run, with a yardstick, after sparrows, flies, all persons passing his door. This is supposed to be scientific, but it can be monomaniac. Very likely the distress and the necessity of Prof. Olmstead were keenest. He was the first to formulate. He “demonstrated” that these meteors, known as the Leonids, revolved around the sun once in six months.

They didn’t.

Then Prof. Newton “demonstrated” that the “real” period was thirty-three and a quarter years. But this was done empirically, and that is not divine, nor even aristocratic, and the thing would have to be done rationally, or mathematically, by someone, because, if there be not mathematical treatment, in gravitational terms, of such phenomena, astronomers are in reduced circumstances. It was Dr. Adams, who, emboldened with his experience in not having to point anywhere near Neptune, but nevertheless being acclaimed by all patriotic Englishmen as the real discoverer of Neptune, mathematically “confirmed” Prof. Newton’s “findings.” Dr. Adams predicted that the Leonids would return in November, 1866, and in

November, 1899, occupying several years, upon each occasion, in passing a point in this earth's orbit.

There were meteors upon the night of Nov. 13-14, 1866. They were plentiful. They often are in the middle of November. They no more resembled the spectacle of 1833 than an ordinary shower resembles a cloudburst. But the "demonstration" required that there should be an equal display, or, according to some aspects, a greater display, upon the corresponding night of the next year. There was a display, the next year; but it was in the sky of the United States, and was not seen in England. Another occurrence nothing like that of 1833 was reported from the United States.

By conventional theory, this earth was in a vast, wide stream of meteors, the earth revolving so as to expose successive parts to bombardment. So keenly did Richard Proctor visualize the earth so immersed and so bombarded, that, when nothing was seen in England, he explained. He spent most of his life explaining. In the *Student*, 2-254, he wrote: "Had the morning of Nov. 14, 1867, been clear in England, we should have seen the commencement of the display, but not its more brilliant part."

We have had some experience with the "triumphs" of astronomers: we have some suspicions as to their greatly advertised accuracy. We shall find out for ourselves whether the morning of Nov. 14, 1867, was clear enough in England or not. We suspect that it was a charming morning, in England—

Monthly Notices, R. A. S. 28-32:

Report by E. J. Lowe, Highfield House, night of Nov. 13-14, 1867:

"Clear at 1.10 A.M.; high, thin cumuli, at 2 A.M., but sky not covered until 3.10 A.M., and the moon's place visible until 3.55 A.M.; sky not overcast until 5.50 A.M."

The determination of the orbital period of thirty-three years and a quarter, but with appearances of a period of thirty-three years, was arrived at by Prof. Newton by searching old records, finding that, in an intersection-period of thirty-three years, there had been extraordinary meteoric displays, from the year 902 A.D. to the year 1833 A.D. He reminds me of an investigator who searched old records for appearances of Halley's comet, and found something that he identified as Halley's comet, exactly on time, every seventy-five years, back to times of the Roman Empire. See the *Edinburgh Review*, vol. *66*. It seems that he did not know that orthodoxy does not attribute exactly a seventy-five year period to Halley's comet. He got what he went looking for, anyway. I have no disposition for us to enjoy

ourselves at Prof. Newton's expense, because, surely enough, his method, if regarded as only experimental, or tentative, is legitimate enough, though one does suspect him of very loose behavior in his picking and choosing. But Dr. Adams announced that, upon mathematical grounds, he had arrived at the same conclusion.

The test:

The next return of the Leonids was predicted for November, 1899.

Memoirs of the British Astronomical Association, 9-6:

"No meteoric event ever before aroused such widespread interest, or so grievously disappointed anticipation."

There were no Leonids in November, 1899.

It was explained. They would be seen next year.

There were no Leonids in November, 1900.

It was explained. They would be seen next year.

No Leonids.

Vaunt and inflation and parade of the symbols of the infinitesimal calculus; the pomp of vectors, and the hush that surrounds quaternions: but when an axis of co-ordinates loses its rectitude, in the service of a questionable selection, disciplined symbols become a rabble. The Most High of Mathematics—and one of his proposed prophets points to the sky. Nowhere near where he points, something is found. He points to a date—nothing happens.

Prof. Serviss, in *Astronomy in a Nutshell,* explains. He explains that the Leonids did not appear when they "should" have appeared, because Jupiter and Saturn had altered their orbits.

Back in the times of the Crusades, and nothing was disturbing the Leonids—and if you're stronger for dates than I am, think of some more dates, and nothing was altering the orbit of the Leonids—discovery of America, and the Spanish Armada, in 1588, which, by some freak, I always remember, and no effects by Jupiter and Saturn—French Revolution and on to the year 1866, and still nothing the matter with the Leonids—but, once removed from "discovery" and "identification," and that's the end of their period, diverted by Jupiter and Saturn, old things that had been up in the sky at least as long as they had been. If we're going to accept the calculi at all, the calculus of probabilities must have a hearing. My own opinion, based upon reading many accounts of November meteors, is that decidedly

the display of 1833 did not repeat in 1866: that a false priest sinned and that an equally false highpriest gave him sanction.

The tragedy goes comically on. I feel that, to all good Neo-astronomers, I can recommend the following serenity from an astronomer who was unperturbed by what happened to his science, in November, 1899, and some more Novembers—

Bryant, *A History of Astronomy*, p. 252:

That the meteoric display of 1899 had failed to appear—"as had been predicted by Dr. Downing and Dr. Johnstone Stoney."

One starts to enjoy this disguisement, thinking of virtually all the astronomers in the world who had predicted the return of the Leonids, and the finding, by Bryant, of two who had not, and his recording only the opinion of these two, coloring so as to look like another triumph—but we may thank our sorely stimulated suspiciousness for still richer enjoyment—

That even these two said no such saving thing—

Nature, Nov. 9, 1899:

Dr. Downing and Dr. Stoney, instead of predicting failure of the Leonids to appear, advise watch for them several hours later than had been calculated.

I conceive of the astronomers' fictitious paradise as malarchitectural with corrupted equations, and paved with rotten symbols. Seeming pure, white fountains of formal vanities—boasts that are gushing from decomposed triumphs. We shall find their furnishings shabby with tarnished comets. We turn expectantly to the subject of comets; or we turn cynically to the subject. We turn maliciously to the subject of comets. Nevertheless, threading the insecurities of our various feelings, is a motif that is the steady essence of Neo-astronomy:

That, in celestial phenomena, as well as in all other fields of research, the irregular, or the unformulable, or the uncapturable, is present in at least equal representation with the uniform: that, given any clear, definite, seemingly unvarying thing in the heavens, co-existently is something of wantonness or irresponsibility, bizarre and incredible, according to the standards of purists—that the science of Astronomy concerns itself with only one aspect of existence, because of course there can be no science of the obverse phenomena —which is good excuse for so enormously disregarding, if we must have the idea that there are real sciences, but which shows the hopelessness of positively attempting.

The story of the Comets, as not told in Mr. Chambers' book of that title, is almost unparalleled in the annals of humiliation. When a comet is predicted to return, that means faith in the Law of Gravitation. It is Newtonism that comets, as well as planets, obey the Law of Gravitation, and move in one of the conic sections. When a comet does not return when it "should," there is no refuge for an astronomer to say that planets perturbed it, because one will ask why he did not include such factors in his calculations, if these phenomena be subject to mathematical treatment. In his book, Mr. Chambers avoids, or indicates that he never heard of, a great deal that will receive cordiality from us, but he does publish a list of predicted comets that did not return. Writing, in 1909, he mentions others for which he had hopes:

Brooks' First Periodic Comet (1886, IV)—"We must see what the years 1909 and 1910 bring forth." This is pretty indefinite anticipation—however, nothing was brought forth, according to *Monthly Notices, R. A. S.,* 1909 and 1910: the Brooks' comet that is recorded is Brooks', 1889. Giacobini's Second Periodic Comet (1900, III)— not seen in 1907—"so we shall not have a chance of knowing more about it until 1914." No more known about it in 1914. Borelly's Comet (1905, II)—"Its expected return, in 1911 or 1912, will be awaited with interest." This is pretty indefinite awaiting: it is now said that this comet did return upon Sept. 19, 1911. Denning's Second Periodic Comet (1894, I)—expected, in 1909, but not seen up to Mr. Chambers' time of writing—no mention in *Monthly Notices.* Swift's Comet, of Nov. 20, 1894—"must be regarded as lost, unless it should be found in December, 1912." No mention of it in *Monthly Notices.*

Three comets were predicted to return in 1913—not one of them returned (*Monthly Notices,* 74-326).

Once upon a time, armed with some of the best and latest cynicisms, I was hunting for prey in the *Magazine of Science,* and came upon an account of a comet that was expected in the year 1848. I supposed that the thing had been positively predicted, and very likely failed to appear, and, for such common game, had no interest. But I came upon the spoor of disgrace, in the word "triumph"—"If it does come, it will afford another astronomical triumph" (*Mag. of Sci.,* 1848-107). The astronomers had predicted the return of a great comet in the year 1848. In *Monthly Notices,* April, 1847, Mr. Hind says that the result of his calculations had satisfied him that the identification had been complete, and that, in all probability, "the comet

must be very near." Accepting Prof. Madler's determinations, he predicted that the comet would return to position nearest the sun, about the end of February, 1848.

No comet.

The astronomers explained. I don't know what the mind of an astronomer looks like, but I think of a fizzle with excuses revolving around it. A writer in the *American Journal of Science,* 2-9-442, explains excellently. It seems that, when the comet failed to return, Mr. Barber, of Etwell, again went over the calculations. He found that, between the years 1556 and 1592, the familiar attractions of Jupiter and Saturn had diminished the comet's period by 263 days, but that something else had wrought an effect that he set down positively at 751 days, with a resulting retardation of 488 days. This is magic that would petrify, with chagrin, the arteries of the hemorrhagicalest statue that ever convinced the faithful—reaching back through three centuries of inter-actions, which, without divine insight, are unimaginable when occurring in three seconds—

But there was no comet.

The astronomers explained. They went on calculating, and ten years later were still calculating. See *Recreative Science,* 1860-139. It would be heroic were it not mania. What was the matter with Mr. Barber, of Etwell, and the intellectual tentacles that he had thrust through centuries is not made clear in most of the contemporaneous accounts; but, in the year 1857, Mr. Hind published a pamphlet and explained. It seems that researches by Littrow had given new verification to a path that had been computed for the comet, and that nothing had been the matter with Mr. Barber, of Etwell, except his insufficiency of data, which had been corrected. Mr. Hind predicted. He pointed to the future, but he pointed like someone closing a thumb and spreading four fingers. Mr. Hind said that, according to Halley's calculations, the comet would arrive in the summer of 1865. However, an acceleration of five years had been discovered, so that the time should be set down for the middle of August, 1860. However, according to Mr. Hind's calculated orbit, the comet might return in the summer of 1864. However, allowing for acceleration, "the comet is found to be due early in August, 1858."

Then Bomme calculated. He predicted that the comet would return upon Aug. 2, 1858.

There was no comet.

The astronomers went on calculating. They predicted that the comet would return upon Aug. 22, 1860.

No comet.

But I think that a touch of mercy is a luxury that we can afford; anyway, we'll have to be merciful or monotonous. For variety we shall switch from a comet that did not appear to one that did appear. Upon the night of June 30, 1861, a magnificent humiliator appeared in the heavens. One of the most brilliant luminosities of modern times appeared as suddenly as if it had dropped through the shell of our solar system—if it be a solar system. There were letters in the newspapers: correspondents wanted to know why this extraordinary object had not been seen coming, by astronomers. Mr. Hind explained. He wrote that the comet was a small object, and consequently had not been seen coming by astronomers. No one could deny the magnificence of the comet; nevertheless Mr. Hind declared that it was very small, looking so large because it was near this earth. This is not the later explanation: nowadays it is said that the comet had been in southern skies, where it had been observed. All contemporaneous astronomers agreed that the comet had come down from the north, and not one of them thought of explaining that it had been invisible because it had been in the south. A luminosity, with a mist around it, altogether the apparent size of the moon, had burst into view. In *Recreative Science,* 3-143, Webb says that nothing like it had been seen since the year 1680. Nevertheless the orthodox pronouncement was that the object was small and would fade away as quickly as it had appeared. See the *Athenaeum,* July 6, 1861—"So small an object will soon get beyond our view." (Hind)

Popular Science Review, 1-513:

That, in April, 1862, the thing was still visible.

Something else that was seen under circumstances that cannot be considered triumphant—upon Nov. 28, 1872, Prof. Klinkerfues, of Gottingen, looking for Biela's comet, saw meteors in the path of the expected comet. He telegraphed to Pogson, of Madras, to look near the star *Theta Centauri,* and he would see the comet. I'd not say that this was in the field of magic, but it does seem consummate. A dramatic telegram like this electrifies the faithful— an astronomer in the north telling an astronomer far in the south where to look, so definitely naming one special little star in skies invisible in the north. Pogson looked where he was told to look and announced that he saw what he was told to see. But at meetings of the R. A.

S., Jan. 10 and March 14, 1873, Captain Tupman pointed out that, even if Biela's comet had appeared, it would have been nowhere near this star.

Among our later emotions will be indignation against all astronomers who say that they know whether stars are approaching or receding. When we arrive at that subject it will be the preciseness of the astronomers that will perhaps inflame us beyond endurance. We note here the far smaller difficulty of determining whether a relatively nearby comet is coming or going. Upon Nov. 6, 1892, Edwin Holmes discovered a comet. In the *Jour. B. A. A.*, 3-182, Holmes writes that different astronomers had calculated its distance from twenty million miles to two hundred million miles, and had determined its diameter to be all the way from twenty-seven thousand miles to three hundred thousand miles. Prof. Young said that the comet was approaching; Prof. Parkhurst wrote merely that the impression was that the comet was approaching the earth; but Prof. Berberich (*Eng. Mec.*, 56-316) announced that, upon November 6, Holmes' comet had been 36,000,000 miles from this earth, and 6,000,000 miles away upon the 16th, and that the approach was so rapid that upon the 21st the comet would touch this earth.

The comet, which had been receding, kept on receding.

4

NEVERTHELESS I sometimes doubt that astronomers represent especial incompetence. They remind me too much of uplifters and grocers, philanthropists, expert accountants, makers of treaties, characters in international conferences, psychic researchers, biologists. The astronomers seem to me about as capitalists seem to socialists, and about as socialists seem to capitalists, or about as Presbyterians seem to Baptists; as Democrats seem to Republicans, or as artists of one school seem to artists of another school. If the basic fallacies, or the absence of base, in every specialization of thought can be seen by the units of its opposition, why then we see that all supposed foundations in our whole existence are myths, and that all discussion and supposed progress are the conflicts of phantoms and the overthrow of old delusions by new delusions. Nevertheless I am searching for some wider expression that will rationalize all of us—conceiving that what we call irrationality is our view of parts and functions out of relation to an underlying whole; an underlying something that is working out its development in terms of planets and acids and bugs, rivers and labor unions and cyclones, politicians and islands and astronomers. Perhaps we conceive of an underlying nexus in which all things, in our existence, are different manifestations—torn by its hurricanes and quaked by the struggles of Labor against Capital— and then, for the sake of balance, requiring relaxations. It has its rougher hoaxes, and some of the apes and some of the priests, and philosophers and wart hogs are nothing short of horse play; but the astronomers are the ironies of its less peasant-like moments— or the deliciousness of pretending to know whether a far-away star is approaching or receding, and at the same time exactly predicting when a nearby comet, which is receding, will complete its approach. This is cosmic playfulness; such pleasantries enable Existence to bear its catastrophes. Shattered comets and sickened nations and the hydrogenic anguishes of the sun—and there must be astronomers for the sake of relaxations.

It will be important to us that the astronomers shall not be less unfortunate in their pronouncements upon motions of the stars than they have turned out to be in other respects. Especially disagreeable to us is the doctrine that stars are variable because dark companies revolve around them; also we prefer to find that nothing fit for somewhat matured minds has been determined as to stars with light companions that encircle them, or revolve with them. If silence be the only true philosophy, and if every positive assertion be a myth, we should easily find requital for our negative preferences.

Prof. Otto Struve was one of the highest of astronomic authorities, and the faithful attribute triumphs to him. Upon March 19, 1873, Prof. Struve announced that he had discovered a companion to the star Procyon. That was an interesting observation, but the mere observation was not the triumph. Some time before, Prof. Auwers, as credulous, if not jocular, as Newton and Leverrier and Adams, had computed the orbit of a hypothetic companion of Procyon's. Upon a chart of the stars, he had drawn a circle around Procyon. This orbit was calculated in gravitational terms, and a general theme of ours is that all such calculations are only ideal, and relate no more to stars and planets or anything else than do the spotless theories of uplifters to events that occur as spots in the one wide daub of existence. Specifically we wish to discredit this "triumph" of Struve's and Auwers', but in general we continue our expression that all uses of the calculus of celestial mechanics are false applications, and that this subject is for aesthetic enjoyment only, and has no place in the science of astronomy, if anybody can think that there is such a science. So, after great labor, or after considerable enjoyment, Auwers drew a circle around Procyon, and announced that that was the orbit of a companion-star. Exactly at the point in this circle where it "should" be, upon March 19, 1873, Struve saw the point of light which, it may be accepted, sooner or later someone would see. According to Agnes Clerke (*System of the Stars*, p. 173) over and over Struve watched the point of light, and convinced himself that it moved as it "should" move, exactly in the calculated orbit. In *Reminiscences of an Astronomer*, p. 138, Prof. Newcomb tells the story. According to him, an American astronomer then did more than confirm Struve's observations: he not only saw but exactly measured the supposed companion.

A defect was found between the lenses of Struve's telescope: it was found that this telescope showed a similar "companion," about 10″ from

every large star. It was found that the more than “confirmatory” determinations by the American astronomer had been upon “a long well-known star.” (Newcomb)

Every astronomic triumph is a bright light accompanied by an imbecility, which may for a while make it variable with diminishments, and then be unnoticed. Priestcrafts are not merely tyrannies: they’re necessities. There must be more reassuring ways of telling this story. The good priest J. E. Gore (*Studies in Astronomy,* p. 104) tells it safely—not a thing except that, in the year 1873, a companion of Procyon’s was, by Struve, “strongly suspected.” Positive assurances of the sciences—they are islands of seeming stability in a cosmic jelly. We shall eclipse the story of Algol with some modern disclosures. In all minds not convinced that earnest and devoted falsifiers are holding back Development, the story, if remembered at all, will soon renew its fictitious luster. We are centers of tremors in a quaking black jelly. A bright and shining delusion looks like beaconed security.

Sir Robert Ball, in the *Story of the Heavens,* says that the period in which Algol blinks his magnitudes is 2 days, 20 hours, 48 minutes, and 55 seconds. He gives the details of Prof. Vogel’s calculations upon a speck of light and an invisibility. It is a god-like command that out of the variations of light shall come the diameters of faint appearances and the distance and velocity of the unseeable —that the diameter of the point of light is 1,054,000 miles, and that the diameter of the imperceptibility is 825,000 miles, and that their centers are 3,220,000 miles apart: orbital velocity of Algol, 26 miles a second, and the orbital velocity of the companion, 55 miles a second—should be stated 26.3 miles and 55.4 miles a second (Proctor, *Old and New Astronomy,* p. 773).

We come to a classic imposition like this, and at first we feel helpless. We are told that this thing is so. It is as if we were modes of motion and must go on, but are obstructed by an absolute bar of ultimate steel, shining, in our way, with an infinite polish.

But all appearances are illusions.

No one with a microscope doubts this; no one who has gone specially from ordinary beliefs into minuter examination of any subject doubts this, as to his own specific experience—so then, broadly, that all appearances are illusions, and that, by this recognition, we shall dissipate resistances, monsters, dragons, oppressors that we shall meet in our pilgrimage. This

bar-like calculation is itself a mode of motion. The static cannot absolutely resist the dynamic, because in the act of resisting it becomes itself proportionately the dynamic. We learn that modifications rusted into the steel of our opposition. The period of Algol, which Vogel carried out to a minute's 55th second, was, after all, so incompetently determined that the whole imposition was nullified—

Astronomical Journal, 11-113:

That, according to Chandler, Algol and his companion do not revolve around each other merely, but revolve together around some second imperceptibility—regularly.

Bull. Soc. Astro. de France, October, 1910:

That M. Mora has shown that in Algol's variations there were irregularities that neither Vogel nor Chandler had accounted for.

The Companion of Sirius looms up to our recognition that the story must be nonsense, or worse than nonsense—or that two light comedies will now disappear behind something darker. The story of the Companion of Sirius is that Prof. Auwers, having observed, or in his mania for a pencil and something to scribble upon, having supposed he had observed, motions of the star Sirius, had deduced the existence of a companion, and had inevitably calculated its orbit. Early in the year 1862, Alvan Clark, Jr., turned his new telescope upon Sirius, and there, precisely where, according to Auwers' calculations, it should be, saw the companion. The story is told by Proctor, writing thirty years later: the finding of the companion, in the "precise position of the calculations"; Proctor's statement that, in the thirty years following, the companion had "conformed fairly well with the calculated orbit."

According to the *Annual Record of Science and Industry*, 1876-18, the companion, in half the time mentioned by Proctor, had not moved in the calculated orbit. In the *Astronomical Register*, 15-186, there are two diagrams by Flammarion: one is the orbit of the companion, as computed by Auwers; the other is the orbit, according to a mean of many observations. They do not conform fairly well. They do not conform at all.

I am now temporarily accepting that Flammarion and the other observing astronomers are right, and that the writers like Proctor, who do not say that they made observations of their own, are wrong, though I have data for thinking that there is no such companion-star. When Clark turned his telescope upon Sirius, the companion was found exactly where Auwers said

it would be found. According to Flammarion and other astronomers, had he looked earlier or later it would not have been in this position. Then, in the name of the one calculus that astronomers seem never to have heard of, by what circumstances could that star have been precisely where it should be, when looked for, Jan. 31, 1862, if, upon all other occasions, it would not be where it should be?

Astronomical Register, 1-94:

A representation of Sirius—but with six small stars around him —an account, by Dr. Dawes, of observations, by Goldschmidt, upon the "companion" and five other small stars near Sirius. Dr. Dawes' accusation, or opinion, is that it scarcely seems possible that some of these other stars were not seen by Clark. If Alvan Clark saw six stars, at various distances from Sirius, and picked out the one that was at the required distance, as if that were the only one, he dignifies our serials with a touch of something other than comedy. For Goldschmidt's own announcement, see *Monthly Notices, R. A. S.,* 23-181, 243.

5

SMUGNESS and falseness and sequences of re-adjusting fatalities—and yet so great is the hypnotic power of astronomic science that it can outlive its "mortal" blows by the simple process of forgetting them, and, in general, simply by denying that it can make mistakes. Upon page 245, *Old and New Astronomy,* Richard Proctor says—"The ideas of astronomers in these questions of distance have not changed, and, in the present position of astronomy, based (in such respects) on absolute demonstration, they cannot change."

Sounds that have roared in the sky, and their vibrations have shaken down villages—if these be the voices of Development, commanding that opinions shall change, we shall learn what will become of the Proctors and their "absolute demonstrations." Lights that have appeared in the sky—that they are gleams upon the armament of Marching Organization. "There can be only one explanation of meteors"—I think it is that they are shining spear-points of slayers of dogmas. I point to the sky over a little town in Perthshire, Scotland—there may be a new San Salvador—it may be a new Plymouth Rock. I point to the crater Aristarchus, of the moon—there, for more than a century, a lighthouse may have been signaling. Whether out of profound meditations, or farrago and bewilderment, I point, directly, or miscellaneously, and, if only a few of a multitude of data be accepted, unformulable perturbations rack an absolute, sureness, and the coils of our little horizons relax their constrictions.

I indicate that, in these pages, which are banners in a cosmic procession, I do feel a sense of responsibility, but how to maintain any great seriousness I do not know, because still is our subject astronomical "triumphs."

Once upon a time there was a young man, aged eighteen, whose name was Jeremiah Horrox. He was no astronomer. He was interested in astronomic subjects, but it may be that we shall agree that a young man of eighteen, who had not been heard of by one astronomer of his time, was an outsider. There was a transit of Venus in December, 1639, but not a grown-up astronomer in the world expected it, because the not always great and

infallible Kepler had predicted the next transit of Venus for the year 1761. According to Kepler, Venus would pass below the sun in December, 1639. But there was another calculation: it was by the great, but sometimes not so great, Lansberg: that, in December, 1639, Venus would pass over the upper part of the sun. Jeremiah Horrox was an outsider. He was able to reason that, if Venus could not pass below the sun, and also over the upper part of the sun, she might take a middle course. Venus did pass over the middle part of the sun's disc; and Horrox reported the occurrence, having watched it.

I suppose this was one of the most agreeable humiliations in the annals of busted inflations. One thinks sympathetically of the joy that went out from seventeenth-century Philistines. The story is told to this day by the Proctors and Balls and Newcombs: the way they tell this story of the boy who was able to conclude that something that could not occupy two extremes might be intermediate, and thereby see something that no professional observer of the time saw, is a triumph of absorption:

That the transit of Venus, in December, 1639, was observed by Jeremiah Horrox, "the great astronomer."

We shall make some discoveries as we go along, and some of them will be worse thought of than others, but there is a discovery here that may be of interest: the secret of immortality—that there is a mortal resistance to everything; but that the thing that can keep on incorporating, or assimilating within itself, its own mortal resistances, will live forever. By its absorptions, the science of astronomy perpetuates its inflations, but there have been instances of indigestion. See the *New York Herald,* Sept. 16, 1909. Here Flam-marion, who probably no longer asserts any such thing, claims Dr. Cook's "discovery of the north pole" as an "astronomical conquest." Also there are other ways. One suspects that the treatment that Dr. Lescarbault received from Flammarion illustrates other ways.

In the year 1859, it seems that Dr. Lescarbault was something of an astronomer. It seems that as far back as that he may have known a planet when he saw one, because, in an interview, he convinced Leverrier that he did know a planet when he saw one. He had at least heard of the planet Venus, because in the year 1882 he published a paper upon indications that Venus has an atmosphere. Largely because of an observation, or an announcement, of his, occurred the climax of Leverrier's fiascos: prediction of an intra-Mercurial planet that did not appear when it "should" appear. My suspicion is that astronomers pardonably, but frailly, had it in for

Lescarbault, and that in the year 1891 came an occurrence that one of them made an opportunity. Early in the year 1891, Dr. Lescarbault announced that, upon the night of Jan. 11, 1891, he had seen a new star. At the next meeting of the French Academy, Flammarion rose, spoke briefly, and sat down without over-doing. He said that Lescarbault had "discovered" Saturn.

If a navigator of at least thirty years' experience should announce that he had discovered an island, and if that island should turn out to be Bermuda, he would pair with Lescarbault—as Flammarion made Lescarbault appear. Even though I am a writer upon astronomical subjects, myself, I think that even I should know Saturn, if I should see him, at least in such a period as the year 1891, when the rings were visible. It is perhaps an incredible mistake. However, it will be agreeable to some of us to find that astronomers have committed just such almost incredible mistakes—

In *Cosmos,* n. s., 42-467, is a list of astronomers who reported "unknown" dark bodies that they had seen crossing the disc of the sun:

La Concha.....Montevideo .....Nov. 5, 1789;
Keyser .....Amsterdam .....Nov. 9, 1802;
Fisher .....Lisbon .....May 5, 1832;
Houzeau .....Brussels .....May 8, 1845.

According to the *Nautical Almanac,* the planet Mercury did cross the disc of the sun upon these dates.

It is either that the Flammarions do so punish those who see the new and the undesired, or that astronomers do "discover" Saturn, and do not know Mercury when they see him—and that Buckle overlooked something when he wrote that only the science of history attracts inferior minds often not fit even for clergymen.

Whatever we think of Flammarion, we admire his deftness. But we shall have an English instance of the ways in which Astronomy maintains itself and controls those who say that they see that which they "should" not see, which does seem beefy. One turns the not very attractive-looking pages of the *English Mechanic,* 1893, casually, perhaps, at any rate in no expectations of sensations—glaring at one, a sketch of such a botanico-pathologic monstrosity as a muskmelon with rows of bunions on it (*English Mechanic,* Oct. 20, 1893). The reader is told, by Andrew Barclay, F.R.A.S.,

Kilmarnock, Scotland, that this enormity is the planet Jupiter, according to the speculum of his Gregorian telescope.

In the next issue of the *English Mechanic*, Capt. Noble, F.R.A.S., writes, gently enough, that, if he had such a telescope, he would dispose of the optical parts for whatever they would bring, and would make a chimney cowl of the tube.

English Mechanic, 1893-2-309—the planet Mars, by Andrew Barclay—a dark sphere, surrounded by a thick ring of lighter material; attached to it, another sphere, of half its diameter—a sketch as gross and repellent to a conventionalist as the museum-freak, in whose body the head of his dangling twin is embedded, its dwarfed body lopping out from his side. There is a description by Mr. Barclay, according to whom the main body is red, and the protuberance blue.

Capt. Noble—"Preposterous . . . last straw that breaks the camel's back!"

Mr. Barclay comes back with some new observations upon Jupiter's lumps, and then in the rest of the volume is not heard from again. One reads on, interested in quieter matters, and gradually forgets the controversy—

English Mechanic, Aug. 23, 1897:

A gallery of monstrosities: Andrew Barclay, signing himself "F.R.A.S.," exhibiting:

The planet Jupiter, six times encircled with lumps; afflicted Mars, with his partly embedded twin reduced in size, but still a distress to all properly trained observers; the planet Saturn, shaped like a mushroom with a ring around it.

Capt. Noble—"Mr. Barclay is not a Fellow of the Royal Astronomical Society, and, were the game worth the candle, might be restrained by injunction from so describing himself!" And upon page 362, of this volume of the *English Mechanic*, Capt. Noble calls the whole matter "a pseudo F.R.A.S.'s crazy hallucinations."

Lists of the Fellows of the Royal Astronomical Society, from June, 1875, to June, 1896:

"Barclay, Andrew, Kilmarnock, Scotland; elected Feb. 8, 1856."

I cannot find the list for 1897 in the libraries. List for 1898— Andrew Barclay's name omitted. Thou shalt not see lumps on Jupiter.

Every one of Barclay's observations has something to support it. All conventional representations of Jupiter show encirclements by strings of rotundities that we are told are cloud-forms, but, in the *Jour. B. A. A.*,

December, 1910, is published a paper by Dr. Downing, entitled “Is Jupiter Humpy?” suggesting that various phenomena upon Jupiter agree with the idea that there are protuberances upon the planet. A common appearance, said to be an illusion, is Saturn as an oblong, if not mushroom-shaped: see any good index for observations upon the “square-shouldered aspect” of Saturn. In L’*Astronomie*, 1889-135, is a sketch of Mars, according to Fontana, in the year 1636—a sphere enclosed in a ring; in the center of the sphere a great protruding body, said, by Fontana, to have looked like a vast, black cone.

But, whether this or that should amuse or enrage us, should be accepted or rejected, is not to me the crux; but Andrew Barclay’s own opening words are:

That, through a conventional telescope, conventional appearances are seen, and that a telescope is tested by the conventionality of its disclosures; but that there may be new optical principles, or applications, that may be, to the eye and the present telescope, what once the conventional telescope was to the eye—in times when scientists refused to look at the preposterous, enraging, impossible moons of Jupiter.

In the *English Mechanic*, 33-327, is a letter from the astronomer, A. Stanley Williams. He had written previously upon double stars, their colors and magnitudes. Another astronomer, Herbert Sadler, had pointed out some errors. Mr. Williams acknowledges the errors, saying that some were his own, and that some were from Smyth’s *Cycle of Celestial Objects.* In the *English Mechanic*, 33-377, Sadler says that, earnestly, he would advise Williams not to use the new edition of Smyth’s *Cycle*, because, with the exception of vol. 40, *Memoirs of the Royal Astronomical Society*, “a more disgracefully inaccurate” catalogue of double stars had never been published. “If,” says one astronomer to the other astronomer, “you have a copy of this miserable production, sell it for waste paper. It is crammed with the most stupid errors.”

A new character appears. He is George F. Chambers, F.R.A.S., author of a long list of astronomical works, and a tract, entitled, *Where Are You Going, Sunday?* He, too, is earnest. In this early correspondence, nothing ulterior is apparent, and we suppose that it is in the cause of Truth that he is so earnest. Says one astronomer that the other astronomer is “evidently one of those self-sufficient young men, who are nothing, if not abusive.” But can Mr. Sadler have so soon forgotten what was done to him, on a former

occasion, after he had slandered Admiral Smyth? Chambers challenges Sadler to publish a list of, say, fifty "stupid errors" in the book. He quotes the opinion of the Astronomer Royal: that the book was a work of "sterling merit." "Airy vs. Sadler," he says: "which is it to be?"

We began not very promisingly. Few excitements seemed to lurk in such a subject as double stars, their colors and magnitudes; but slander and abuse are livelier, and now enters curiosity: we'd like to know what was done to Herbert Sadler.

Late in the year 1876, Herbert Sadler was elected a Fellow of the Royal Astronomical Society. In *Monthly Notices, R.A.S.,* January, 1879, appears his first paper that was read to the Society: *Notes on the late Admiral Smyth's Cycle of Celestial Objects, volume second, known as the Bedford Catalogue.* With no especial vehemence, at least according to our own standards of repression, Sadler expresses himself upon some "extraordinary mistakes" in this work.

At the meeting of the Society, May 9, 1879, there was an attack upon Sadler, and it was led by Chambers, or conducted by Chambers, who cried out that Sadler had slandered a great astronomer, and demanded that Sadler should resign. In the report of this meeting, published in the *Observatory,* there is not a trace of anybody's endeavors to find out whether there were errors in this book or not: Chambers ignored everything but his accusation of slander, and demanded again that Sadler should resign. In *Monthly Notices,* 39-389, the Council of the Society published regrets that it had permitted publication of Sadler's paper, "which was entirely unsupported by the citation of instances upon which his judgment was founded."

We find that it was Mr. Chambers who had revised and published the new edition of Smyth's *Cycle.*

In the *English Mechanic,* Chambers challenged Sadler to publish, say, fifty "stupid errors." See page 451, vol. 33, *English Mechanic*—Sadler lists just fifty "stupid errors." He says that he could have listed, not 50, but 250, not trivial, but of the "grossest kind." He says that in one set of 167 observations, 117 were wrong.

The *English Mechanic* drops out of this comedy with the obvious title, but developments go on. Evidently withdrawing its "regrets," the Council permitted publication of a criticism of Chambers' edition of Smyth's *Cycle,* in *Monthly Notices,* 40-497, and the language in this criticism, by S. W. Burnham, was no less interpretable as slanderous than was Sadler's: that

Smyth's data were "either roughly approximate or grossly incorrect, and so constantly recurring that it was impossible to explain that they were ordinary errors of observation." Burnham lists 30 pages of errors.

Following is a paper by E. B. Knobel, who published 17 pages of instances in which, in his opinion, Mr. Burnham had been too severe. Knowing of no objection by Burnham to this reduction, we have left 13 pages of errors in one standard astronomical work, which may fairly be considered as representative of astronomical work in general, inasmuch as it was, in the opinion of the Astronomer Royal, a book of "sterling merit."

I think that now we have accomplished something. After this we should all get along more familiarly and agreeably together. Thirteen pages of errors in one standard astronomical work are reassuring; there is a likeable fallibility here that should make for better relations. If the astronomers were what they think they are, we might as well make squeaks of disapproval against Alpine summits. As to astronomers who calculate positions of planets— of whom he was one—Newcomb, in *Reminiscences of an Astrono-mer,* says—"The men who have done it are therefore, in intellect, the select few of the human race—an aristocracy above all others in the scale of being." We could never get along comfortably with such awful selectness as that. We are grateful to Mr. Sadler, in the cause of more comfortable relations.

6

English Mechanic, 56-184:

THAT, upon April 25, 1892, Archdeacon Nouri climbed Mt. Ararat. It was his hope that he should find something of archaeologic compensation for his clamberings. He found Noah's Ark.

About the same time, Dr. Holden, Director of the Lick Observatory, was watching one of the polished and mysterious-looking instruments that, in the new ikonology, have replaced the images of saints. Dr. Holden was waiting for the appointed moment of the explosion of a large quantity of dynamite in San Francisco Bay. The moment came. The polished little "saint" revealed to the faithful scientist. He wrote an account of the record, and sent copies to the San Francisco newspapers. Then he learned that the dynamite had not been fired off. He sent a second messenger after the first messenger, and, because messengers sometimes have velocities proportional to urgencies—"the Observatory escaped ridicule by a narrow margin." See the *Observatory*, 20-467. This revelation came from Prof. Colton, who, though probably faithful to all the "saints," did not like Dr. Holden.

The system that Archdeacon Nouri represented lost its power be cause its claims exceeded all conceivableness, and because, in other respects, of its inertness to the obvious. The system that Dr. Holden represented is not different: there is the same seeing of whatever may be desirable, and the same profound meditations upon the remote, with the same inattention to fairly acceptable starting-points. The astronomers like to tell audiences of just what gases are burning in an unimaginably remote star, but have never reasonably made acceptable, for instance, that this earth is round, to start with. Of course I do not mean to say that this, or anything else, can be positively proved, but it is depressing to hear it said, so authoritatively, that the round shadow of this earth upon the moon proves that this earth is round, whereas records of angular shadows are common, and whereas, if this earth were a cube, its straight sides would cast a rounded shadow upon the convex moon. That the first part of a receding vessel to disappear should

be the lower part may be only such an illusion of perspective as that by which railroad tracks seem to dip toward each other in the distance. Meteors sometimes appear over one part of the horizon and then seem to curve down behind the opposite part of the horizon, whereas they describe no such curve, because to a string of observers each observer is at the center of the seeming curve.

Once upon a time—about the year 1870—occurred an unusual sporting event. John Hampden, who was noted for his piety and his bad language, whose avowed purpose was to support the principles of this earth's earliest geodesist, offered to bet five hundred pounds that he could prove the flatness of this earth. Somewhere in England is the Bedford Canal, and along a part of it is a straight, unimpeded view, six miles in length. Orthodox doctrine—or the doctrine of the newer orthodoxy, because John Hampden considered that he was orthodox—is that the earth's curvature is expressible in the formula of 8 inches for the first mile, and then the square of the distance times 8 inches. For two miles, then, the square of 2, or 4, times 8. An object six miles away should be depressed 288 inches, or, allowing for refraction, according to Proctor (*Old and New Astronomy)* 216 inches. Hampden said that an object six miles away, upon this part of the Bedford Canal, was not depressed as it "should" be. Dr. Alfred Russell Wallace took up the bet. Mr. Walsh, Editor of the *Field,* was the stakeholder. A procession went to the Bedford Canal. Objects were looked at through telescopes, or looked for, and the decision was that Hampden had lost. There was rejoicing in the fold of the chosen, though Hampden, in one of his most furious bombardments of verses from the Bible, charged conspiracy and malfeasance and confiscation, and what else I don't know, piously and intemperately declaring that he had been defrauded.

In the *English Mechanic,* 80-40, someone writes to find out about the "Bedford Canal Experiment." We learn that the experiment had been made again. The correspondent writes that, if there were basis to the rumors that he had heard, there must be something wrong with established doctrine. Upon page 138, Lady Blount answers— that, upon May 11, 1904, she had gone to the Bedford Canal, accompanied by Mr. E. Clifton, a well-known photographer, who was himself uninfluenced by her motives, which were the familiar ones of attempting to restore the old gentleman who first took up the study of geodesy. However, she seethes with neither piety nor profanity. She says that, with his telescopic camera, Mr. Clifton had

photographed a sheet, six miles away, though by conventional theory the sheet should have been invisible. In a later number of the *English Mechanic, a* reproduction of this photograph is published. According to this evidence this earth is flat, or is a sphere enormously greater than is generally supposed. But at the 1901 meeting of the British Association for the Advancement of Science, Mr. H. Yule Oldham read a paper upon his investigations at the Bedford Canal. He, too, showed photographs. In his photographs, everything that should have been invisible was invisible.

I accept that anybody who is convinced that still are there relics upon Mt. Ararat, has only to climb Mt. Ararat, and he must find something that can be said to be part of Noah's Ark, petrified perhaps. If someone else should be convinced that a mistake has been made, and that the mountain is really Pike's Peak, he has only to climb Pike's Peak and prove that the most virtuous of all lands was once the Holy Land. The meaning that I read in the whole subject is that, in this Dark Age that we're living in, not even such rudimentary matters as the shape of this earth have ever been investigated except now and then to support somebody's theory, because astronomers have instinctively preferred the remote and the not so easily understandable and the safe from external inquiry. In *Earth Features and Their Meaning,* Prof. Hobbs says that this earth is top-shaped, quite as the sloping extremities of Africa and South America suggest. According to Prof. Hobbs, observations upon the pendulum suggest that this earth is shaped like a top. Some years ago, Dr. Gregory read a paper at a meeting of the Royal Geographical Society, giving data to support the theory of a top-shaped earth. In the records of the Society, one may read a report of the discussion that followed. There was no ridiculing. The President of the Society closed the discussion with virtual endorsement, recalling that it was Christopher Columbus who first said that this earth is top-shaped. For other expressions of this revolt against ancient dogmas, see *Bull. Soc. Astro. de France,* 17-315; 18-143; *Pop. Sci. News*, 31-234; *Eng. Mec.*, 77-159; *Sci. Amer.*, 100-441.

As to supposed motions of this earth, axial and orbital, circumstances are the same, despite the popular supposition that the existence of these motions has been established by syntheses of data and by unanswerable logic. All scientists, philosophers, religionists, are today looking back, wondering what could have been the matter with their predecessors to permit them to believe what they did believe. Granted that there will be

posterity, we shall be predecessors. Then what is it that is conventionally taught today that will in the future seem as imbecilic as to all present orthodoxies seem the vaporings of preceding systems?

Well, for instance, that it is this earth that moves, though the sun seems to, by the same illusion by which to passengers on a boat, the shore seems to move, though it is the boat that is moving.

Apply this reasoning to the moon. The moon seems to move around the earth—but to passengers on a boat, the shore seems to move, whereas it is the boat that is moving—therefore the moon does not move.

As to the motions of the planets and stars that co-ordinate with the idea of a moving earth—they co-ordinate equally well with the idea of a stationary earth.

In the system that was conceived by Copernicus I find nothing that can be said to resemble foundation: nothing but the appeal of greater simplicity. An earth that rotates and revolves is simpler to conceive of than is a stationary earth with a rigid composition of stars, swinging around it, stars kept apart by some unknown substance, or inter-repulsion. But all those who think that simplification is a standard to judge by are referred to Herbert Spencer's compilations of data indicating that advancing knowledge complicates, making, then, complexity, and not simplicity, the standard by which to judge the more advanced. My own acceptance is that there are fluxes one way and then the other way: that the Ptolemaic system was complex and was simplified; that, out of what was once a clarification, new complications have arisen, and that again will come flux toward simplification or clarification—that the simplification by Copernicus has now developed into an incubus of unintelligibilities revolving around a farrago of inconsistencies, to which the complexities of Ptolemy are clear geometry: miracles, incredibilities, puerilities; tottering deductions depending upon flimsy agreements; brutalized observations that are slaves to infatuated principles—

And one clear call that is heard above the rumble of readjusting collapses—the call for a Neo-astronomy—it may not be our Neo-astronomy.

Prof. Young, for instance, in his *Manual of Astronomy,* says that there are no common, obvious proofs that the earth moves around the sun, but that there are three abstrusities, all of modern determination. Then, if Copernicus founded the present system, he founded upon nothing. He had nothing to base upon. He either never heard of, or could not detect one of

these abstrusities. All his logic is represented in his reasoning upon this earth's rotundity: that this earth is round, because of a general tendency to sphericity, manifesting, for instance, in fruits and in drops of water—showing that he must have been unaware not only of abstrusities, but of icicles and bananas and oysters. It is not that I am snobbishly deriding the humble and more than questionable ancestry of modern astronomy. I am pointing out that a doctrine came into existence with nothing for a foundation: not a datum, not one observation to found upon; no astronomical principles, no mechanical principles to justify it. Our inquiry will be as to how, in the annals of false architecture, it could ever be said that—except miraculously, of course—a foundation was subsequently slipped under this baseless structure, dug under, rammed under, or God knows how devised and fashioned.

7

THE three abstrusities:

The aberration of light, the annual parallax of the stars, the regular, annual shift of the lines of the stellar spectra.

By the aberration of light is meant a displacement of all stars, during a year's observation, by which stars near the pole of the ecliptic describe circles, stars nearer the ecliptic describe ellipses, and the stars of the ecliptic, only little straight lines. It is supposed that light has velocity, and that these forms represent the ratio between the velocity of light and the supposed velocity of this earth in its orbit. In the year 1725, Bradley conceived of the present orthodox explanation of the aberration-forms of the stars: that they reflect or represent the path that this earth traverses around the sun, as it would look from the stars, appearing virtually circular from stars in the pole of the ecliptic, for instance. In Bradley's day there were no definite delusions as to the traversing by this earth of another path in space, as part of a whole moving system, so Bradley felt simple and satisfied. About a century later by some of the most amusing reasoning that one could be entertained with, astronomers decided that the whole supposed solar system is moving, at a rate of about 13 miles a second from the region of Sirius to a point near Vega, all this occurring in northern skies, because southern astronomers had not very much to say at that time. Now, then, if at one time in the year, and in one part of its orbit, this earth is moving in the direction in which the whole solar system is moving, there we have this earth traversing a distance that is the sum of its own motion and the general motion; then when the earth rounds about and retraces, there we have its own velocity minus the general velocity. The first abstrusity, then, is knocked flat on its technicalities, because the aberration-forms, then, do not reflect the annual motion of this earth: if, in conventional terms, though the path of this earth is circular or elliptic relatively to the sun, when compounding with solar motion it is not so formed relatively to stars; and there will have to be another explanation for the aberration-forms.

The second supposed proof that this earth moves around the sun is in the parallax of the stars. In conventional terms, it is said that opposite points in this earth's orbit are 185,000,000 miles apart. It is said that stars, so differently viewed, are minutely displaced against their backgrounds. Again solar-motion—if, in conventional terms, this earth has been traveling, as part of the solar system, from Sirius, toward Vega, in 2,000 years this earth has traveled 819,936,000,000 miles. This distance is 4,500 times the distance that is the base line for orbital parallax. Then displacement of the stars by solar-motion parallax in 2,000 years, should be 4,500 times the displacement by orbital parallax, in one year. Give to orbital parallax as minute a quantity as is consistent with the claims made for it, and 4,500 times that would dent the Great Dipper and nick the Sickle of Leo, and perhaps make the Dragon look like a dragon. But not a star in the heavens has changed more than doubtfully since the stars were catalogued by Hipparchus, 2,000 years ago. If, then, there be minute displacements of stars that are attributed to orbital parallax, they will have to be explained in some other way, if evidently the sun does not move from Sirius toward Vega, and if then, quite as reasonably, this earth may not move.

Prof. Young's third "proof" is spectroscopic.

To what degree can spectroscopy in astronomy be relied upon?

Bryant, *A History of Astronomy,* p. 206:

That, according to Bélopolsky, Venus rotates in about 24 hours, as determined by the spectroscope; that, according to Dr. Slipher, Venus rotates in about 224 days, as determined by the spectroscope.

According to observations too numerous to make it necessary to cite any, the seeming motions of stars, occulted by the moon, show that the moon has atmosphere. According to the spectroscope, there is no atmosphere upon the moon (*Pubs. Astro. Soc. Pacific,* vol. 6, no. 37).

The ring of light around Venus, during the transits of 1874 and 1882, indicated that Venus has atmosphere. Most astronomers say that Venus has an atmosphere of extreme density, obscuring the features of the planet. According to spectrum analysis, by Sir William Huggins, Venus has no atmosphere (*Eng. Mec.*, 4-22).

In the *English Mechanic,* 89-439, are published results of spectroscopic examinations of Mars, by Director Campbell, of the Lick Observatory: that there is no oxygen, and that there is no water vapor on Mars. In *Monthly Notices, R.A.S.,* 27-178, are published results of spectroscopic examinations

of Mars by Huggins: abundance of oxygen; same vapors as the vapors of this earth.

These are the amusements of our Pilgrim's Progress, which has new San Salvadors for its goals, or new Plymouth Rocks for its expectations—but the experiences of pilgrims have variety—

In 1895, at the Allegheny Observatory, Prof. Keeler undertook to determine the rotation-period of Saturn's rings, by spectroscopy. It is gravitational gospel that particles upon the outside of the rings move at the rate of 10.69 miles a second; particles upon the inner edge, 13.01 miles a second. Prof. Keeler's determinations were what Sir Robert Ball calls "brilliant confirmation of the mathematical deduction." Prof. Keeler announced that according to the spectroscope, the outside particles of the rings of Saturn move at the rate of 10.1 miles a second, and that the inner particles move at the rate of 12.4 miles a second—"as they ought to," says Prof. Young, in his gospel, *Elements of Astronomy.*

One reads of a miracle like this, the carrying out into decimals of different speeds of different particles in parts of a point of light, the parts of which cannot be seen at all without a telescope, whereby they seem to constitute a solid motionless structure, and one admires, or one worships, according to one's inexperience—

Or there comes upon one a sense of imposture and imposition that is not very bearable. Imposition or imposture or captivation—and it's as if we've been trapped and have been put into a revolving cage, some of the bars revolving at unthinkable speed, and other bars of it going around still faster, even though not conceivable. Disbelieve as we will, deride and accuse, and think of all the other false demonstrations that we have encountered, as we will—there's the buzz of the bars that encircle us. The concoction that has caged us is one of the most brilliant harlots in modern prostitution: we're imprisoned at the pleasure of a favorite in the harem of the God of Gravitation. That's some relief: language always is—but how are we to "determine" that the rings of Saturn do not move as they "ought" to, and thereby add more to the discrediting of spectroscopy in astronomy ?

A gleam on a planet that's like shine on a sword to deliver us—

The White Spot of Saturn—

A bright and shining deliverer.

There's a gleam that will shatter concoctions and stop velocities. There's a shining thing on the planet Saturn, and the blow that it shines is lightning.

Thus far has gone a revolution of 10.1 miles a second, but it stops by magic against magic; no farther buzzes a revolution of 12.4 miles a second—that the rings of Saturn may not move as, to flatter one little god, they "ought" to, because, by the handiwork of Universality, they may be motionless.

Often has a white spot been seen upon the rings of Saturn: by Schmidt, Bond, Secchi, Schroeter, Harding, Schwabe, De Vico—a host of other astronomers.

It is stationary.

In the *English Mechanic*, 49-195, Thomas Gwyn Elger publishes a sketch of it as he saw it upon the nights of April 18 and 20, 1889. It occupied a position partly upon one ring and partly upon the other, showing no distortion. Let Prof. Keeler straddle two concentric merry-go-rounds, whirling at different velocities: there will be distortion. See vol. 49, *English Mechanic*, for observation after observation by astronomers upon this appearance, when seen for several months in the year 1889, the observers agreeing that, no matter what are the demands of theory, this fixed spot did indicate that the rings of Saturn do not move.

The White Spot on Saturn has blasted minor magic. He has little, black retainers who now function in the cause of completeness—the little, black spots of Saturn—

Nature, 53-109:

That, in July and August, 1895, Prof. Mascari, of the Catania Observatory, had seen dark spots upon the crepe ring of Saturn. The writer in *Nature* says that such duration is not easy to explain, if the rings of Saturn be formations of moving particles, because different parts of the discolored areas would have different velocities, so that soon would they distort and diffuse.

Certainly enough, relatively to my purpose, which is to find out for myself, and to find out with anybody else who may be equally impressed with a necessity, a brilliant, criminal thing has been slain by a gleam of higher intensity. Certainly enough, then, with the execution of one of its foremost exponents, the whole subject of spectroscopy in astronomy has been cast into rout and disgrace, of course only to ourselves, and not in the view of manufacturers of spectroscopes, for instance; but a phantom thing dies a phantom death, and must be slain over and over again.

I should say that just what is called the spectrum of a star is not commonly understood. It is one of the greatest uncertainties in science. The

spectrum of a star is a ghost in the first place, but this ghost has to be further attenuated by a secondary process, and the whole appearance trembles so with the twinkling of a star that the stories told by spectra are gasps of palsied phantoms. So it is that, in one of the greatest indefinitenesses in science, an astronomer reads in a bewilderment that can be made to correspond with any desideratum. So it is our acceptance that when any faint, tremulous story told by a spectrum becomes standardized, the conventional astronomer is told, by the spectroscope, what he should be told, but that when anything new appears, for which there is no convention, the bewilderment of the astronomers is made apparent, and the worthlessness of spectroscopy in astronomy is shown to all except those who do not want to be shown. Upon the first of February, 1892, Dr. Thomas D. Anderson, of Edinburgh, discovered a new star that became known as Nova Aurigae. Here was something as to which there was no dogmatic "determination." Each astronomer had to see, not what he should, but what he could. We shall see that the astronomers might as well have gone, for information, to some of Mrs. Piper's "controls" as to think of depending upon their own ghosts.

In *Monthly Notices,* February, 1893, it is said that probably for seven weeks, up to the time of calculation, one part of this new star had been receding at a rate of 230 miles a second, and another part approaching at a rate of 320 miles a second, giving to these components a distance apart of 550 miles x 60 x 60 x 24 x 49, whatever that may be.

But there was another seance. This time Dr. Vogel was the medium. The ghosts told Dr. Vogel that the new star had three parts, one approaching this earth at the rate of about 420 miles a second, another approaching at a rate of 22 miles a second, a third part receding at a rate of 300 miles a second. See *Jour. B. A. A.*, 2-258.

After that, the "controls" became hysterical. They flickered that there were six parts of this new star, according to Dr. Lowell's *Evolution of Worlds*, p. 9. The faithful will be sorry to read that Lowell revolted. He says: "There is not room for so many on the stage of the cosmic drama." For other reasons for repudiating spectroscopy, or spiritualism, in astronomy, read what else Lowell says upon this subject.

Nova Aurigae became fainter. Accordingly, Prof. Klinkerfues "found" that two bodies had passed, and had inflamed, each other, and that the light of their mutual disturbances would soon disappear (*Jour. B. A. A.*, 2-365).

Nova Aurigae became brighter. Accordingly, Dr. Campbell "determined" that it was approaching this earth at a rate of 128 miles a second (*Jour. B. A. A.*, 2-504).

Then Dr. Espin went into a trance. It was revealed to him that the object was a nebula (*Eng. Mec.*, 56-61). Communication from Dr. and Mrs. Huggins, to the Royal Society—not a nebula, but a star (*Eng. Mec.*, 57-397). See *Nature*, 47-352, 425—that, according to M. Eugen Gothard, the spectrum of N. A. agreed "perfectly" with the spectrum of a nebula: that, according to Dr. Huggins, no contrast could be more striking than the difference between the spectrum of N. A., and the spectrum of a nebula.

For an account of the revelations at Stonyhurst Observatory, see *Mems. R. A. S.*, 51-129—that there never had been a composition of bodies moving at the rates that were so definitely announced, because N. A. was a single star.

Though I have read some of the communications from "Rector" and "Dr. Phinuit" to Mrs. Piper, I cannot think that they ever mouthed sillier babble than was flickered by the star-ghosts to the astronomers in the year 1892. We noted Prof. Klinkerfues' "finding" that two stars had passed each other, and that the illumination from their mutual perturbations would soon subside. There was no such disappearance. For observations upon N. A., ten years later, see *Monthly Notices*, 62-65. For Prof. Barnard's observations twenty years later, see *Sci. Amer. Sup.*, 76-154.

The spectroscope is useful in a laboratory. Spoons are useful in a kitchen. If any other pilgrim should come upon a group of engineers trying to dig a canal with spoons, his experience and his temptation to linger would be like ours as to the astronomers and their attempted application of the spectroscope. I don't know what of remotest acceptability may survive in the third supposed proof that this earth moves around the sun, though we have not found it necessary to go into the technicalities of the supposed proof. I think we have killed the phantom thing, but I hope we have not quite succeeded, because we are moved more by the aesthetics of slaughter than by plain murderousness: we shall find unity in disposing of the third "proof" by the means by which the two others were disposed of—

Regular Annual Shift of Spectral Lines versus Solar Motion—

That, if this earth moves around the sun, the shift might be found by scientific Mrs. Pipers so to indicate—

But that if part of the time this earth, as a part of one traveling system, moves at a rate of 19 plus 13 miles a second and then part of the time at a rate of 19 minus 13 miles a second, compounding with great complexities at transverse times, that is the end of the regular annual shift that is supposed to apply to orbital motion.

We need not have admitted in the first place that the three abstrusities are resistances: however, we have a liking for revelations ourselves. Aberration and Parallax and Spectral Lines do not indicate only that this earth moves relatively to the stars: quite as convincingly they indicate that the stars in one composition gyrate relatively to a central and stationary earth, all of them in one concavity around this earth, some of them showing faintest of parallax, if this earth be not quite central to the revolving whole.

Something that I did not mention before, though I referred to Lowell's statements, is that astronomers now admit, or state, that the shift of spectral lines, which they say indicates that this earth moves around the sun, also indicates any one of three other circumstances, or sets of circumstances. Some persons will ask why I didn't say so at first, and quit the meaningless subject. Maybe it was a weakness of mine—something of a sporting instinct, I fear me, I have at times. I lingered, perhaps slightly intoxicated, with the deliciousness of Prof. Keeler and his decimals—like someone at a race track, determining that a horse is running at a rate of 2,653 feet and 4 inches a minute, by a method that means that no more than it means that the horse is brown, is making clattering sounds, or has a refreshing odor. For a study of a state of mind like that of many clergymen who try to believe in Moses, and in Darwin, too, see the works of Prof. Young, for instance. This astronomer teaches the conventional spectroscopic doctrine, and also mentions the other circumstances that make the doctrine meaningless. Such inconsistencies are phenomena of all transitions from the old to the new.

Three giants have appeared against us. Their hearts are bubbles. Their bones wilt. They are the limp caryatides that uphold the phantom structure of Palaeo-astronomy. By what miracle, we asked, could foundation be built subsequently under a baseless thing. But three ghosts can fit in anywhere.

Sometimes astronomers cite the Foucault pendulum-experiment as "proof" of the motions of this earth. The circumstances of this demonstration are not easily made clear: consequently one of normal suspiciousness is likely to let it impose upon him. But my practical and commonplace treatment is to disregard what the experiment and its

complexities are, and to enquire whether it works out or not. It does not. See *Amer. Jour. Sci.,* 2-12-402; *Eng. Mec.,* 93-293, 306; *Astro. Reg.,* 2-265. Also we are told that experiments upon falling bodies have proved this earth's rotation. I get so tired of demonstrating that there never has been any Evolution mentally, except as to ourselves, that, if I could, I'd be glad to say that these experiments work out beautifully. Maybe they do. See Proctor's *Old and New Astronomy,* p. 229.

8

IT is supposed that astronomic subjects and principles and methods cannot be understood by the layman. I think this, myself. We shall take up some of the principles of astronomy, with the idea of expressing that of course they cannot be understood by the unhypnotized any more than can the stories of Noah's Ark and Jonah and the Whale be understood, but that our understanding, if we have any, will have some material for its exercises, just the same. The velocity of light is one of these principles. A great deal in the astronomic system depends upon this supposed velocity: determinations of distance, and amount of aberration depend. It will be our expression that these are ratios of impositions to mummeries, with such clownish products that formulas turn into antics, and we shall have scruples against taking up the subject at all, because we have much hard work to do, and we have qualms against stopping so often to amuse ourselves. But, then, sometimes in a more sentimental mood, I think that the pretty story of the velocity of light, and its "determination," will some day be of legitimate service; be rhymed some day, and told to children, in future kindergartens, replacing the story of Little Bopeep, with the tale of a planet that lost its satellites and sometimes didn't know where to find them, but that good magicians came along and formulated the indeterminable.

It was found by Roemer, a seventeenth-century astronomer, that, at times, the moons of Jupiter did not disappear behind him, and did not emerge from behind him, when they "should." He found that as distance between this earth and Jupiter increased, the delays increased. He concluded that these delays represented times consumed by the light of the moons in traveling greater distances. He found, or supposed he found, that when this earth is farthest from Jupiter, light from a satellite is seen 22 minutes later than when nearest Jupiter. Given measurement of the distance between opposite points in the earth's supposed orbit, and time consumed in traveling this distance—there you have the velocity of light.

I still say that it is a pretty story and should be rhymed; but we shall find that astronomers might as well try to formulate the gambols of the sheep of

Little Bopeep, as to try to formulate anything depending upon the satellites of Jupiter.

In the *Annals of Philosophy,* 23-29, Col. Beaufoy writes that, upon Dec. 7, 1823, he looked for the emergence of Jupiter's third satellite, at the time set down in the *National Almanac:* for two hours he looked, and did not see the satellite emerge. In *Monthly Notices,* 44-8, an astronomer writes that, upon the night of Oct. 15, 1883, one of the satellites of Jupiter was forty-six minutes late. A paper was read at the meeting of the British Astronomical Association, Feb. 8, 1907, upon a satellite that was twenty minutes late. In *Telescopic Work,* p. 191, W. F. Denning writes that, upon the night of Sept. 12, 1889, he and two other astronomers could not see satellite IV at all. See the *Observatory,* 9-237—satellite IV disappeared 15 minutes before calculated time; about a minute later it re-appeared; disappeared again; re-appeared nine minutes later. For Todd's observations see the *Observatory,* 2-227—six times, between June 9 and July 2, 1878, a satellite was visible when, according to prediction, it should have been invisible. For some more instances of extreme vagaries of these satellites, see *Monthly Notices,* 43-427, and *Jour. B. A. A.,* 14-27: observations by Noble, Turner, White, Holmes, Freeman, Goodacre, Ellis, and Molesworth. In periodical astronomical publications, there is no more easily findable material for heresy than such observations. We shall have other instances. They abound in the *English Mechanic,* for instance. But, in spite of a host of such observations, Prof. Young (*The Sun,* p. 35) says that the time occupied by light coming from these satellites is doubtful by "only a fraction of a second." It is of course another instance of the astronomers who know very little of astronomy.

It would have been undignified, if the astronomers had taken the sheep of Little Bopeep for their determinations. They took the satellites of Jupiter. They said that the velocity of light is about 190,000 miles a second.

So did the physicists.

Our own notion is that there is no velocity of light: that one *sees* a thing, or doesn't; that if the satellites of Jupiter behave differently according to proximity to this earth, that may be because this earth affects them, so affecting them, because the planets may not, as we may find, be at a thousandth part of the "demonstrated" distances. The notion of velocity of light finds support, we are told in the text-books, in the velocity of sound. If

it does, it doesn't find support in gravitational effects, because, according to the same text-books, gravitational effects have no velocity.

The physicists agreed with the astronomers. A beam of light is sent through, and is reflected back through, a revolving shutter— but it's complex, and we're simple: we shall find that there is no need to go into the details of this mechanism. It is not that a machine *is* supposed to register a velocity of 186,000 miles a second, or we'd have to be technical: it is that the eye is supposed to perceive—

And there is not a physicist in the world who can perceive when a parlor magician palms off playing-cards. Hearing, or feeling, or if one could smell light, some kind of a claim might be made— but the well-known limitations of seeing; common knowledge of little boys that a brand waved about in the dark cannot be followed by the eyes. The limit of the perceptible is said to be ten changes a second.

I think of the astronomers as occupying a little vortex of their own in the cosmic swoon in which wave all things, at least in this one supposed solar system. Call it swoon, or call it hypnosis—but that it is never absolute, and that all of us sometimes have awareness of our condition, and moments of wondering what it's all about and why we do and think the things that sometimes we wake up and find ourselves doing and thinking. Upon page 281, *Old and New Astronomy,* Richard Proctor awakens momentarily, and says: "The agreement between these results seems close enough, but those who know the actual difficulty of precise time-observations of the phenomena of Jupiter's satellites, to say nothing of the present condition of the theory of their motions, can place very little reliance on the velocity of light deduced from such observations." Upon pages 603-607, Proctor reviews some observations other than those that I have listed—satellites that have disappeared, come back, disappeared, returned again so bewilderingly that he wrote what we have quoted—observations by Gorton, Wray, Gambart, Secchi, Main, Grover, Smyth-Maclear-Pearson, Hodgson, Carlisle, Siminton. And that is the last of his awareness: Proctor then swoons back into his hypnosis. He then takes up the determination of the velocity of light by the physicists, as if they could be relied upon, accepting every word, writing his gospel, glorying in this miracle of science. I call it a tainted agreement between the physicists and the astronomers. I prefer mild language. If by a method by which nothing could be found out, the astronomers determined that the velocity of light is about 190,000 miles a

second, and if the physicists by another method found about the same result, what kind of harmony can that be other than the reekings of two consistent stenches? Proctor wrote that very little reliance could be placed upon anything depending upon Jupiter's satellites. It never occurred to him to wonder by what miracle the physicists agreed with these unreliable calculations. It is the situation that repeats in the annals of astronomy—a baseless thing that is supposed to have a foundation slipped under it, wedged in, or God knows how introduced or foisted. I prefer not to bother much with asking how the physicists could determine anything of a higher number of changes than ten per second. If it be accepted that the physicists are right, the question is—by what miracle were the astronomers right, if they had "very little" to rely upon?

Determinations of planetary distances and determinations of the velocity of light have squirmed together: they represent either an agreeable picture of co-operation, or a study in mutual support by writhing infamies. With most emphasis I have taken the position that the vagaries of the Jovian satellites are so great that extremely little reliance can be placed upon them, but now it seems to me that the emphasis should be upon the admission that, in addition to these factors of indeterminateness, it was, up to Proctor's day, not known with anything like accuracy when the satellites should appear and disappear. In that case one wonders as to the state of the theory in Roemer's day. It was in the mind of Roemer that the two "determinations" we are now considering first most notably satisfied affinity: mutual support by velocity of light and distances in this supposed solar system. Upon his Third Law, which, as we shall see later, he constructed upon at least three absences of anything to build upon, Kepler had, upon observations upon Mars, deduced 13,000,000 miles as this earth's distance from the sun. By the same method, which is the now discredited method of simultaneous observations, Roemer determined this distance to be 82,000,000 miles. I am not concerned with this great discrepancy so much as with the astronomers' reasons for starting off distances in millions instead of hundreds or thousands of miles.

In Kepler's day the strongest objection urged against the Copernican system was that, if this earth moves around the sun, the stars should show annual displacements—and it.is only under modern "refinements" that the stars do so minutely vary, perhaps. The answer to this objection was that the stars are vastly farther away than was commonly supposed. Entailed by this

answer was the necessity of enlarging upon common suppositions generally. Kepler determined or guessed, just as one pleases, and then Roemer outdid him. Roemer was followed by Huygens, with continued outdoing: 100,000,000 according to Huygens. Huygens took for his basis his belief that this earth is intermediate in size to Mars and Venus. Astronomers, today, say that this earth is not so intermediate. We see that, in the secondary phase of development, the early astronomers, with no means of knowing whether the sun is a thousand or a million miles away, guessed or determined such distances as 82,000,000 miles and 100,000,000 miles, to account for the change-lessness of the stars. If the mean of these extremes is about the distance of present dogmas, we'd like to know by what miracle a true distance so averages two products of wild methods. Our expression is that these developments had their origin in conspiracy and prostitution, if one has a fancy for such accusations; or, if everybody else has been so agreeable, we think more amiably, ourselves, that it was all a matter of comfortably adjusting and being obliging all around. Our expression is that ever since the astronomers have seen and have calculated as they should see and should calculate. For instance, when this earth's distance from the sun was supposed to be 95,000,000 miles, all astronomers taking positions of Mars, calculated a distance of 95,000,000 miles; but then, when the distance was cut down to about 92,000,000 miles, all astronomers, taking positions of Mars, calculated about a distance of 92,000,000 miles. It may sound like a cynicism of mine, but in saying this I am quoting Richard Proctor, in one of his lucid suspicions (*Old and New Astronomy*, p. 280).

With nothing but monotony, and with nothing that looks like relief for us, the data of conspiracy, or of co-operation, continue. Upon worthless observations upon the transits of Venus, 1761 and 1769, this earth's orbit was found by Encke to be about 190,000,000 miles across (distance of the sun about 95,000,000 miles). Altogether progress had been more toward the wild calculations of Huygens than toward the undomesticated calculations of Roemer. So, to agree with this change, if not progress, Delambre, taking worthless observations upon the satellites of Jupiter, cut down Roemer's worthless determinations, and announced that light crosses the plane of this earth's orbit in 16 minutes and 32 seconds—as it ought to, Prof. Young would say. It was then that the agreeably tainted physicists started spinning and squinting, calculating "independently," we are told, that Delambre was right. Everything settled—everybody comfortable—see Chambers'

Handbook of Astronomy, published at this time—that the sun's distance had been ascertained, "with great accuracy," to be 95,298,260 miles—

But then occurred something that is badly, but protectively, explained, in most astronomical works. Foucault interfered with the deliciousness of those 95,298,260 miles. One may read many books that mention this subject, and one will always read that Foucault, the physicist, by an "independent" method, or by an "absolutely independent" method, disagreed somewhat. The "disagreement" is paraded so that one has an impression of painstaking, independent scientists not utterly slavishly supporting one another, but at the same time keeping well over the 90,000,000 mark, and so essentially agreeing, after all. But we find that there was no independence in Foucault's "experiments." We come across the same old disgusting connivance, or the same amiable complaisance, perhaps. See Clerke's *History of Astronomy,* p. 230. We learn that astronomers, to explain oscillations of the sun, had decided that the sun must be, not 95,298,260 miles away, but about 91,000,000. To oblige them, perhaps, or innocently, never having heard of them, perhaps, though for ten years they had been announcing that a new determination was needed, Foucault "found" that the velocity of light is less than had been necessary to suppose, when the sun was supposed to be about 95,000,000 miles away, and he "found" the velocity to be exactly what it should be, supposing the sun to be 91,000,000 miles away. Then it was that the astronomers announced, not that they had cut down the distance of the sun because of observations upon solar oscillations, but because they had been very much impressed by the "independent" observations upon the velocity of light, by Foucault, the physicist. This squirm occurred at the meeting of the Royal Astronomical Society, February, 1864. There would have to be more squirms. If, then, the distance across this earth's orbit was "found" to be less than Delambre had supposed, somebody would have to find that light comes from the satellites of Jupiter a little slower than Delambre had "proved." Whereupon, Glassenapp "found" that the time is 16 minutes and 40 seconds, which is what he should, or "ought to," find. Whereupon, there would have to be re-adjustment of Encke's calculations of distance of sun, upon worthless observations upon transits of Venus. And whereupon again, Newcomb went over the very same observations by which Encke had compelled agreement with the dogmas of his day, and Newcomb calculated, as was required, that the distance agreed with Foucault's reduction.

Whether, in the first place, Encke ever did calculate, as he said he did, or not, his determination was mere agreement with Laplace's in the seventh book of the *Méchanique Celeste.* Of course he said that he had calculated independently, because his method was by triangulation, and Laplace's was the gravitational.

That the word "worthless" does apply to observations upon transits of Venus:

In *Old and New Astronomy,* Proctor says that the observations upon the transits of 1761 and 1769 were "altogether unsatisfactory." One supposes that anything that is altogether unsatisfactory can't be worth much. In the next transit, of 1874, various nations co-operated. The observations were so disappointing that the Russian, Italian, and Austrian Governments refused to participate in the expeditions of 1882. In *Reminiscences of an Astronomer,* p. 181, Newcomb says that the United States Commission, of which he was Secretary, had up to 1902 never published in full its observations, and probably never would, because by that time all other members were either dead or upon the retired list.

Method of Mars—more monotony—because of criticisms of the taking of parallax by simultaneous observations, Dr. David Gill went to the Island of Ascension, during the opposition of Mars of 1877, to determine alone, by the diurnal method, the distance of this earth from the sun, from positions of Mars. For particulars of Gill's method, see, for instance, Poor's *Solar System,* p. 86. Here Prof. Poor says that, of course, the orbital motion of Mars had to be allowed for, in Gill's calculations. If so, then of course this earth's orbital motion had to be allowed for. If Dr. Gill knew the space traversed by this earth in its orbit, and the curvature of its path, he knew the size and shape of the orbit, and consequently the distance from the sun. Then he took for the basis of his allowance that this earth is about 93,000,000 miles from the sun, and calculated that this earth is about 93,000,000 miles from the sun. For this classic deduction from the known to the same known, he received a gold medal.

In our earlier surveys, we were concerned with the false claim that there can be application of celestial mechanics to celestial phenomena; but, as to later subjects, the method is different. The method of all these calculations is triangulation.

One simple question:

To what degree can triangulation be relied upon?

To great degree in measuring the height of a building, or in the little distances of a surveyor’s problems. It is clear enough that astronomers did not invent the telescope. They adopted the spectroscope from another science. Their primary mathematical principle of triangulation they have taken from the surveyors, to whom it is serviceable. The triangle is another emblem of the sterility of the science of astronomy. Upon the coat of arms of this great mule of the sciences, I would draw a prism within a triangle.

9

ACCORDING to Prof. Newcomb, for instance, the distance of the sun is about 380 times the distance of the moon—as determined by triangulation. But, upon page 22, *Popular Astronomy,* Newcomb tells of another demonstration, with strikingly different results—as determined by triangulation.

A split god.

The god Triangulation is not one undivided deity.

The other method with strikingly different results is the method of Aristarchus. It cuts down the distance of the sun, from 380 to 20 times the distance of the moon. When an observer upon this earth sees the moon half-illumined, the angle at the moon, between observer and sun, is a right angle; a third line between observer and sun completes a triangle. According to Aristarchus, the tilt of the third line includes an angle of 86 degrees, making the sun-earth line 20 times longer than the moon-earth line.

"In principle," says Newcomb, "the method is quite correct and very ingenious, but it cannot be applied in practice." He says that Aristarchus measured wrong; that the angle between the moon-earth line and the earth-sun line is almost 90 degrees and not 86 degrees. Then he says that the method cannot be applied because no one can determine this angle that he had said is of almost 90 degrees. He says something that is so incongruous with the inflations of astronomers that they'd sizzle if their hypnotized readers could read and think at the same time. Newcomb says that the method of Aristarchus cannot be applied because no astronomer can determine when the moon is half-illumined.

We have had some experience.

Does anybody who has been through what we've been through suppose that there is a Prof. Keeler in the world who would not declare that trigonometrically and spectroscopically and micro-metrically he had determined the exact moment and exasperating, or delightful, decimal of a moment of semi-illumination of the moon, were it not that, according to at least as good a mathematician as he, determination based upon that

demonstration does show that the sun is only 20 times as far away as the moon? But suppose we agree that this simple thing cannot be done.

Then instantly we think of some of the extravagant claims with which astronomers have stuffed supine credulities. Crawling in their unsightly confusion that sickens for simplification, is this offense to harmony:

That astronomers can tell under which Crusade, or its decimalated moment, a shine left a star, but cannot tell when a shine reaches a line on the moon—

Glory and triumph and selectness and inflation—or that we shall have renown as evangelists, spreading the homely and wholesome doctrine of humility. Hollis, in *Chats on Astronomy,* tells us that the diameter of this earth, at the equator, is 41,851,160 feet. But blessed be the meek, we tell him. In the *Observatory,* 19-118, is published the determination, by the astronomer Brenner, of the time of rotation of Venus, as to which other astronomers differ by hundreds of days. According to Brenner, the time is 23 hours, 57 minutes, and 7.5459 seconds. I do note that this especial refinement is a little too ethereal for the Editor of the *Observatory:* he hopes Brenner will pardon him, but is it necessary to carry out the finding to the fourth decimal of a second ? However, I do not mean to say that all astronomers are as refined as Brenner, for instance. In the *Jour. B. A. A.,* 1-382, Edwin Holmes, perhaps coarsely, expresses some views. He says that such “exactness” as Capt. Noble’s in writing that the diameter of Neptune is 38,133 miles and that of Uranus is 33,836 miles is bringing science into contempt, because very little is known of these planets; that, according to Neison, these diameters are 27,000 miles and 28,500 miles. Macpherson, in *A Century’s Progress in Science,* quotes Prof. Serviss: that the average parallax of a star, which is an ordinary astronomic quantity, is “about equal to the apparent distance between two pins, placed one inch apart, and viewed from a distance of one hundred and eighty miles.” Stick pins in a cushion, in New York—go to Saratoga and look at them —be overwhelmed with the more than human powers of the scientifically anointed—or ask them when shines half the moon.

The moon’s surface is irregular. I do not say that anybody with brains enough to know when he has half a shoe polished should know when the sun has half the moon shined. I do say that if this simple thing cannot be known, the crowings of astronomers as to enormously more difficult determinations are mere barnyard disturbances.

Triangulation that, according to his little priests, straddles orbits and on his apex wears a star—that he's a false Colossus; shrinking, at the touch of data, back from the stars, deflating below the sun and moon; stubbing down below the clouds of this earth, so that the different stories that he told to Aristarchus and to Newcomb are the conflicting vainglories of an earth-tied squatter—

The blow that crumples a god:

That, by triangulation, there is not an astronomer in the world who can tell the distance of a thing only five miles away.

Humboldt, *Cosmos,* 5-138:

Height of Mauna Loa: 18,410 feet, according to Cook; 16,611, according to Marchand; 13,761, according to Wilkes—according to triangulation.

In the *Scientific American,* 119-31, a mountain climber calls the Editor to account for having written that Mt. Everest is 29,002 feet high. He says that, in his experience, there is always an error of at least ten per cent, in calculating the height of a mountain, so that all that can be said is that Mt. Everest is between 26,100 and 31,900 feet high. In the *Scientific American,* 102-183, and *319,* Miss Annie Peck cites two measurements of a mountain in India: they differ by 4,000 feet.

The most effective way of treating this subject is to find a list of measurements of a mountain's height before the mountain was climbed, and compare with the barometric determination, when the mountain was climbed. For a list of 8 measurements, by tri-angulation, of the height of Mt. St. Elias, see the *Alpine Journal,* 22-150: they vary from 12,672 to 19,500 feet. D'Abruzzi climbed Mt. St. Elias, Aug. 1,1897. See a paper, in the *Alpine Journal,* 19-125. D'Abruzzi barometric determination—18,092 feet.

Suppose that, in measuring, by triangulation, the distance of anything five miles away, the error is, say, ten per cent. But, as to anything ten miles away, there is no knowing what the error would be. By triangulation, the moon has been "found" to be 240,000 miles away. It may be 240 or 240,000,000 miles away.

10

PSEUDO heart of a phantom thing—it is Keplerism, pulsating with Sir Isaac Newton's regularizations.

If triangulation cannot be depended upon accurately to measure distance greater than a mile or two between objects and observers, the aspects of Keplerism that depend upon triangulation should be of no more concern to us than two pins in a cushion 180 miles away: nevertheless so affected by something like seasickness are we by the wobbling deductions of the conventionalists that we shall have direct treatment, or independent expressions, whenever we can have, or seem to have, them. Kepler saw a planetary system, and he felt that, if that system could be formulated in terms of proportionality, by discovering one of the relations quantitatively, all its measurements could be deduced. I take from Newcomb, in *Popular Astronomy,* that, in Kepler's view, there was system in the arrangement and motions of the four little traitors that sneak around Jupiter; that Kepler, with no suspicions of these little betrayers, reasoned that this central body and its accompaniments were a representation, upon a small scale, of the solar system, as a whole. Kepler found that the cubes of mean distances of neighboring satellites of Jupiter, divided by the squares of their times, gave the same quotients. He reasoned that the same relations subsisted among planets, if the solar system be only an enlargement of the Jovian system.

Observatory, December, 1920: "The discordances between theory and observation (as to the motions of Jupiter's satellites) are of such magnitude that continued observations of their precise moments of eclipses are very much to be desired." In the Report of the Jupiter Section of the British Astronomical Society (*Mens. B. A. A.,* 8-83) is a comparison between observed times and calculated times of these satellites. 65 observations, in the year 1899, are listed. In one instance prediction and observation agree. Many differences of 3 or 4 minutes are noted, and there are differences of 5 or 6 minutes.

Kepler formulated his law of proportionality between times and distances of Jupiter's satellites without knowing what the times are. It should be

noted that the observations in the year 1899 took into consideration fluctuations that were discovered by Roemer, long after Kepler's time.

Just for the sake of having something that looks like opposition, let us try to think that Kepler was miraculously right anyway. Then, if something that may resemble Kepler's Third Law does subsist in the Jovian satellites that were known to Kepler, by what resemblance to logicality can that proportionality extend to the whole solar system, if a solar system can be supposed?

In the year 1892, a fifth satellite of Jupiter was discovered. Maybe it would conform to Kepler's law, if anybody could find out accurately in what time the faint speck does revolve. The sixth and the seventh satellites of Jupiter revolve so eccentrically that, in line of sight, their orbits intersect. Their distances are subject to very great variations; but, inasmuch as it might be said that their mean distances do conform to Kepler's Third Law, or would, if anybody could find out what their mean distances are, we go on to the others. The eighth and the ninth conform to nothing that can be asserted. If one of them goes around in one orbit at one time, the next time around it goes in some other orbit, and in some other plane. Inasmuch then as Kepler's Third Law, deduced from the system of Jupiter's satellites, cannot be thought to extend even within that minor system, one's thoughts stray into wondering what two pins in a cushion in Louisville, Ky., look like from somewhere up in the Bronx, rather than to dwell any more upon extension of any such pseudo-proportionality to the supposed solar system, as a whole.

It seems that in many of Kepler's demonstrations was this failure to have grounds for a starting-point, before extending his rea soning. He taught the doctrine of the music of the spheres, and assigned bass voices to Saturn and Jupiter, then tenor to Mars, contralto to the female planet, and soprano, or falsetto, rather, to little Mercury. And that is all very well and consistently worked out in detail, and it does seem reasonable that, if ponderous, if not lumpy, Jupiter does sing bass, the other planets join in, according to sex and huskiness—however, one does feel dissatisfied.

We have dealt with Newcomb's account. But other conventionalists say that Kepler worked out his Third Law by triangulation upon Venus and Mercury when at greatest elongation, "finding" that the relation between Mercury and Venus is the same as the relation between Venus and this earth. If, according to conventionalists, there was no "proof" that this earth

moves, in Kepler's time, Kepler started by assuming that this earth moves between Venus and Mars; he assumed that the distance of Venus from the sun, at greatest elongation, represents mean distance; he assumed that observations upon Mercury indicated Mercury's orbit, an orbit that to this day defies analysis. However, for the sake of seeming to have opposition, we shall try to think that Kepler's data did give him material for the formulation of his law. His data were chiefly the observations of Tycho Brahe. But, by the very same data, Tycho had demonstrated that this earth does not move between Venus and Mars; that this earth is stationary. That stoutest of conventionalists, but at the same time seeming colleague of ours, Richard Proctor, says that Tycho Brahé's system was consistent with all data. I have never heard of an astronomer who denies this. Then the heart of modern astronomy is not Keplerism, but is one diversion of data that beat for such a monstrosity as something like Siamese Twins, serving both Keplerism and the Tychonic system. I fear that some of our attempts to find opposition are not very successful.

So far, this mediæval doctrine, restricting to times and distances, though for all I know the planets sing proportionately as well as move proportionately, has data to interpret or to misinterpret. But, when it comes to extending Kepler's Third Law to the exterior planets, I have never read of any means that Kepler had of determining their proportional distances. He simply said that Mars and Jupiter and Saturn were at distances that proportionalized with their times. He argued, reasonably enough, perhaps, that the slower-moving planets are the remoter, but that has nothing to do with proportional remoteness.

This is the pseudo heart of phantom astronomy.

To it Sir Isaac Newton gave a seeming of coherence.

I suspect that it was not by chance that the story of an apple should so importantly appear in two mythologies. The story of Newton and the apple was first told by Voltaire. One has suspicions of Voltaire's meanings. Suppose Newton did see an apple fall to the ground, and was so inspired, or victimized, into conceiving in terms of universal attraction. But had he tried to take a bone away from a dog, he would have had another impression, and would have been quite as well justified in explaining in terms of universal repulsion. If, as to all inter-acting things, electric, biologic, psychologic, economic, sociologic, magnetic, chemic, as well as canine, repulsion is as much of a determinant as is attraction, the Law of Gravitation, which is an

attempt to explain in terms of attraction only, is as false as would be dogmas upon all other subjects if couched in terms of attraction only. So it is that the law of gravitation has been a rule of chagrin and fiasco. So, perhaps accepting, or passionately believing in every symbol of it, a Dr. Adams calculates that the Leonids will appear in November, 1899—but chagrin and fiasco—the Leonids do not appear. The planet Neptune was not discovered mathematically, because, though it was in the year 1846 somewhere near the position of the formula, in the year 1836 or 1856, it would have been nowhere near the orbit calculated by Leverrier and Adams. Some time ago, against the clamor that a Trans-Uranian planet had been discovered mathematically, it was our suggestion that, if this be not a myth, let the astronomer now discover the Trans-Neptunian planet mathematically. That there is no such mathematics, in the face of any number of learned treatises, is far more strikingly betrayed by those shining little misfortunes, the satellites of Jupiter. Satellite after satellite of Jupiter was discovered, but by accident or by observation, and not once by calculation: never were the perturbations of the earlier known satellites made the material for deducing the positions of other satellites. Astronomers have pointed to the sky, and there has been nothing; one of them pointed in four directions at once, and four times over, there was nothing; and many times when they have not pointed at all, there has been something.

Apples fall to the ground, and dogs growl, if their bones are taken away: also flowers bloom in the spring, and a trodden worm turns.

Nevertheless strong is the delusion that there is gravitational astronomy, and the great power of the Law of Gravitation, in popular respectfulness, is that it is mathematically expressed. According to my view, one might as well say that it is fetishly expressed. Descartes was as great a mathematician as Newton: veritably enough may it be said that he invented, or discovered, analytic geometry; only patriotically do Englishmen say that Newton invented, or discovered, the infinitesimal calculus. Descartes, too, formulated a law of the planets and not by a symbol was he less bewildering and convincing to the faithful, but his law was not in terms of gravitation, but in terms of vorticose motion. In the year 1732, the French Academy awarded a prize to John Bernouli, for his magnificent mathematical demonstration, which was as unintelligible as anybody’s. Bernouli, too, formulated, or said he formulated, planetary inter-actions, as

mathematically as any of his hypnotized admirers could have desired: it, too, was not gravitational.

The fault that I find with a great deal of mathematics in astronomy is the fault that I should find in architecture, if a temple, or a skyscraper, were supposed to prove something. Pure mathematics is architecture: it has no more place in astronomy than has the Parthenon. It is the arbitrary: it will not spoil a line nor dent a surface for a datum. There is a faint uniformity in every chaos: in discolorations on an old wall, anybody can see recognizable appearances; in such a mixture a mathematician will see squares and circles and triangles. If he would merely elaborate triangles and not apply his diagrams to theories upon the old wall itself, his constructions would be as harmless as poetry. In our metaphysics, unity cannot, of course, be the related. A mathematical expression of unity cannot, except approximately, apply to a planet, which is not final, but is part of something.

Sir Isaac Newton lived long ago. Every thought in his mind was a reflection of his era. To appraise his mind at all comprehensively, consider his works in general. For some other instances of his love of numbers, see, in his book upon the Prophecies of Daniel, his determinations upon the eleventh horn of Daniel's fourth animal. If that demonstration be not very acceptable nowadays, some of his other works may now be archaic. For all I know Jupiter may sing bass, either smoothly or lumpily, and for all I know there may be some formulable ratio between an eleventh horn of a fourth animal and some other quantity: I complain against the dogmas that have solidified out of the vaporings of such minds, but I suppose I am not very substantial, myself. Upon general principles, I say that we take no ships of the time of Newton for models for the ships of today, and build and transport in ways that are magnificently, or perhaps disastrously, different, but that, at any rate, are not the same; and that the principles of biology and chemistry and all the other sciences, except astronomy, are not what they were in Newton's time, whether every one of them is a delusion or not. My complaint is that the still mediæval science of astronomy holds back alone in a general appearance of advancement, even though there probably never has been real advancement.

There is something else to be said upon Keplerism and Newtonism. It is a squirm. I fear me that our experiences have sophisticated us. We have noted the division in Keplerism, by which, like everything else that we have examined, it is as truly interpretable one way as it is another way.

The squirm:

To lose all sense of decency and value of data, but to be agreeable; but to be like everybody else, and intend to turn our agreeableness to profit;

To agree with the astronomers that Kepler's three laws are not absolutely true, of course, but are approximations, and that the planets do move, as in Keplerian doctrine they are said to move— but then to require only one demonstration that this earth is one of the planets;

To admire Newton's *Principia* from the beginning to the end of it, having, like almost all other admirers, never even seen a copy of it; to accept every theorem in it, without having the slightest notion what any one of them means; to accept that moving bodies do obey the laws of motion, and must move in one of the conic sections—but then to require only one demonstration that this earth is a moving body.

Kepler's three laws are popularly supposed to demonstrate that this earth moves around the sun. This is a mistake. There is something wrong with everything that is popular. As was said by us before, accept that this earth is stationary, and Kepler's doctrines apply equally well to a sun around which proportionately interspaced planets move in ellipses, the whole system moving around a central and stationary earth. All observations upon the motions of heavenly bodies are in accord with this interpretation of Kepler's laws. Then as to nothing but a quandary, which means that this earth is stationary, or which means that this earth is not stationary, just as one pleases, Sir Isaac Newton selected, or pleased himself and others. Without one datum, without one little indication more convincing one way than the other, he preferred to think that this earth is one of the moving planets. To this degree had he the "profundity" that we read about. He wrote no books upon the first and second horns of his dilemma: he simply disregarded the dilemma.

To anybody who may be controversially inclined, I offer simplification. He may feel at a disadvantage against batteries of integrals and bombardments of quaternions, transcendental functions, conics, and all the other stores of an astronomer's munitions—

Admire them. Accept that they do apply to the bodies that move around the sun. Require one demonstration that this earth is one of those bodies. For treatment of any such "demonstration," see our disquisition, or our ratiocinations upon the Three Abstrusities, or our intolerably painful attempts to write seriously upon the Three Abstrusities.

We began with three screams from an exhilarated mathematician. We have had some doubtful adventures, trying hard to pretend that monsters, or little difficulties, did really oppose us. We have reached, not the heart of a system, but the crotch of quandary.

11

WE have seen that some of the most brilliant inspirations of god-like intellects, or some of the most pestilential emanations from infected minds, have been attempts to account for the virtual changelessness of the stars. Above all other data of astronomy, that virtual changelessness of positions stands out as a crucial circumstance in my own mind. To account for constellations that have not changed in 2,000 years, astronomers say that they conceive of inconceivable distances. We shall have expressions of our own upon the virtually changeless positions of the stars; but there will be difficulties for us if the astronomers ever have found that some stars move around or with other stars. I shall take up the story of Prof. Struve and the "Companion of Procyon," with more detail, for the sake of some more light upon refinement, exactness, accuracy in astronomy, and for the sake of belittling, or for the sake of sneering, or anything else that anybody may choose to call it.

Prof. Struve's announcement of his discovery of the "Companion of Procyon" is published in *Monthly Notices,* 33-430—that, upon the 19th of March, 1873, Struve had discovered the companion of Procyon, having compared it micrometrically, having tested his observations with three determinations of position-angle, three measures of distance, and three additional determinations of position-angle, finding all in "excellent agreement." No optical illusion could be possible, it is said, because another astronomer, Lindemann, had seen the object. Technically, Struve publishes a table of his observations: sidereal time, distances, position-angles; from March 19 to April 2, 1873, after which his observations had to be discontinued until the following year. In *Monthly Notices,* 34-355, are published the resumed observations. Struve says that Auwers would not accept the discovery, unless, in the year that had elapsed, the "companion" had shown increase in position, consistent with theory. Struve writes —"This increase has really shown itself in the most remarkable manner." Therefore, he considers it "decisively established" that the object of his observations was the object of Auwers' calculations. He says that Ceraski,

of Moscow, had seen the “companion,” “without being warned of the place where it was to be looked for.”

However—see back some chapters.

It may be said that, nevertheless, other stars have companions that do move as they should move. Later we shall consider this subject, thinking that it may be that lights have been seen to change position near some stars, but that never has a star revolved around another star, as to fit palæo-astronomic theory it should. I take for a basis of analogy that never has one sat in a park and watched a tree revolve around one, but that given the affliction, or the endowment, of an astronomer, illusion of such a revolution one may have. We sit in a park. We notice a tree. Wherever we get the notion, we do have the notion that the tree has moved. Then, farther along, we notice another tree, and, as an indication of our vivid imagination or something else, we think it is the same tree, farther along. After that we pick out tree after tree, farther along, and, convinced that it is the same tree, of course conclude that the thing is revolving around us. Exactness and refinement develop: we compute the elements of its orbit. We close our eyes and predict where the tree will be when next we look; and there, by the same process of selection and identification, it is where it “should” be. And if we have something of almost everybody’s mania for speed, we make that damn thing spin around with such velocity that we, too, reel in a chaos of very much unsettled botanic conventions. There is nothing far-fetched in this analogy, except the factor of velocity. Goldschmidt did announce that there were half a dozen faint points of light around Sirius, and it was Dawes’ suspicion that Clark had arbitrarily picked out one of them. It is our expression that all around Sirius, at various distances from Sirius, faint points of light were seen, and that at first, even for the first sixteen years, astronomers were not thoroughly hypnotized, and would not pick out the especial point of light that they should have picked out, so that there was nothing like agreement between the calculated and the observed orbit. Besides the irreconcilable observations noted by Flammarion, see the *Intel. Obs.,* 1-482, for others. Then came standardized seeing. So, in the *Observatory,* 20-73, is published a set of observations, in the year 1896, upon the “Companion of Sirius,” placing it exactly where it should be. Nevertheless, under this set of observations is published another set, so different that the Editor asks—”Does this mean that there are two companions ?”

Dark Companions require a little more eliminative treatment. So the variable nebulæ, then—and do dark nebulæ revolve around light nebulæ? For instances of variable nebulæ, see *Mems. R. A. S.,* 49-214; *Comptes Rendus,* 59-637; *Monthly Notices,* 38-104. It may be said that they are not of the Algol-type. Neither is Algol, we have shown.

According to the compulsions of data, our idea is that the stars that seem to be fixed in position are fixed in position, so now "proper motion" is as irreconcilable to us as relative motions.

As to "proper motion," the situation is this:

The stars that were catalogued 2,000 years ago have virtually not changed, or, if there be refinement in modern astronomy, have changed no more than a little more nearly exact charting would account for; but, in astronomic theory, the stars are said to be thought of as flying apart at unthinkable velocity; so then evidence of changed positions of stars is welcome to astronomers. As to well-known constellations, it cannot be said that there has been change; so, with several exceptions, "proper motion" is attributed to stars that are not well-known.

The result is an amusing trap. Great proper motion is said to indicate relative nearness to this earth. Of the twenty-five stars of supposed greatest proper motion, all but two are faintest of stars; so these twenty-three are said to be nearest this earth. But when astronomers take the relative parallax of a star, by reference to a fainter star, they agree that the fainter star, because fainter, is farther away. So one time faintness associates with nearness, and then conveniences change, and faintness associates with farness, and the whole subject so associates with humorousness, that if we're going to be serious at all in these expressions of ours we had better pass on.

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Observatory, March, 1914:

A group of three stars that disappeared.

If three stars disappeared at once, they were acted upon by something that affected all in common. Try to think of some one force that would not tear the seeable into visible rags, that could blot out three stars, if they were trillions of miles apart. If they were close together that ends the explanation that only because stars are trillions of miles apart have they, for at least 2,000 years, seemed to hold the same relative positions.

In Agnes Clerke's *System of the Stars,* are cited many instances of stars that seem to be so closely related that it seems impossible to think that they are trillions, or billions, or millions of miles apart: such formations as "seven aligned stars appearing to be strung on a silvery filament." There are loops of stars in a cluster in Auriga; lines and arches in Opiuchus; zig-zag figures in Sagittarius. As to stars that not only seem close together but that are colored alike, Miss Clerke expresses her feeling that they are close together—"If these colors be inherent, it is difficult to believe that the stars distinguished by them are simply thrown together by perspective." As to figures in Sagittarius, Fison (*Recent Advances in Astronomy)* cites an instance of 30 small stars in the form of a forked twig, with dark rifts parallel. According to Fison, probability is overwhelmingly against the three uncommon stars in the belt of Orion falling into a straight line, by chance distribution, considering also that below this line is another of five faint stars parallel. There are dark lanes or rifts in the Milky Way that are like branches from main lanes or rifts, and the rifts sometimes have well-defined edges. In many regions where there are dark rifts there are lines of stars that are roughly parallel—

That it is not distances apart that have held the stars from changing relatively to one another, because there are hosts of indications that some stars are close together, and are, or have been, affected, in common, by local formative forces.

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For a detailed comparison, by J. E. Gore, of stars of today with stars catalogued by Al-Sufi about 1,000 years ago, see the *Observatory,* vol. 23. The stars have not changed in position, but it does seem that there have been many changes in magnitude.

Other changes—*Pubs. Astro. Soc. Pacific,* No. 185 (1920)—discovery of the seventeenth new star in one nebula (Andromeda). For lists of stars that have disappeared, see *Monthly Notices,* 8-16; 10-18; 11-47; *Sidereal Messenger,* 6-320; *Jour. B. A. A.,* 14-255. Nebulæ that have disappeared—see *Amer. Jour. Sci.,* 2-33-436; Clerke's *System of the Stars,* p. 293; *Nature)* 30-20.

In the *Sidereal Messenger,* 5-269, Prof. Colbert writes that, upon August 20, 1886, an astronomer, in Chicago, saw, for about half an hour, a small comet-like projection from the star *Zeta,* in Cassiopeia.

So, then, changes have been seen at the distance of the stars.

When the new star in Perseus appeared, in February, 1901, it was a point of light. Something went out from it, giving it in six months a diameter equal to half the apparent diameter of the moon. The appearances looked structural. To say loosely that they were light-effects, something like a halo, perhaps, is to ignore their complexity and duration and differences. According to Newcomb, who is occasionally quotable in our favor, these radiations were not mere light-rays, because they did not go out uniformly from the star, but moved out variously and knotted and curved.

It was visible motion, at the distance of Nova Persei.

In *Monthly Notices*, 58-334, Dr. Espin writes that, upon the night of Jan. 16, 1898, he saw something that looked like a cloud in Perseus. It could have been nothing in the atmosphere of this earth, nor anything far from the constellation, because he saw it again in Perseus, upon January 24. He writes that, upon February 17, Mr. Heath and Dr. Halm saw it, like a cloud, dimming and discoloring stars shining through it. At the meeting of the British Astronomical Association, Feb. 23, 1898 (*Jour. B. A. A.*, 8-216), Dr. Espin described this appearance and answered questions. “It was not a nebula, and was not like one.” “Whatever it was it had the peculiar property of dimming and blotting out stars.”

This thing moved into Perseus and then moved away.

Clerke, *The System of the Stars*, p. 295—a nebula that changed position abruptly, between the years 1833 and 1835, and then changed no more. According to Sir John Herschel, a star was central in this nebula, when observed in 1827, and in 1833, but, in August, 1835, the star was upon the eastern side of the nebula.

That it is not distance from this earth that has kept changes of position of the stars from being seen, for 2,000 years, because occasional, abrupt changes of position have been seen at the distance of the stars.

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That, whether there be a shell-like, revolving composition, holding the stars in position, and in which the stars are openings, admitting light from an existence external to the shell, or not, all stars are at about the same distance from this earth as they would be if this earth were stationary and central to such a shell, revolving around it—

According to the aberration-forms of the stars.

All stars, at the pole of the ecliptic, describe circles annually; stars lower down describe ellipses that reduce more and more the farther down they

are, until at the ecliptic they describe straight lines yearly.

Suppose all the stars to be openings, fixed in position relatively to one another, in some inter-spacing substance. Conceive of a gyration to the whole aggregation, and relatively to a central and stationary earth: then, as seen from this earth, all would describe circles, near the axis, ellipses lower down, and straight lines at the limit of transformation. If all were at the same distance from this earth, or if all were points in one gyrating concave formation, equi-distant at all points from the central earth, all would have the same amplitude. All aberration-forms of the stars, whether of brilliant or faint stars, whether circles or ellipses or straight lines, have the same amplitude: about 41 seconds of arc.

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If all stars are points of light admitted from externality, held fixed and apart in one shell-like composition that is opaque in some parts and translucent in some parts and perforated generally—

The Gegenschein—

That we have indication that there is such a shell around our existence.

The Gegenschein is a round patch of light in the sky. It seems to be reflected sunlight, at night, because it keeps position about opposite the sun's.

The crux:

Reflected sunlight—but reflecting from what?

That the sky is a matrix in which the stars are openings, and that, upon the inner, concave surface of this celestial shell, the sun casts its light, even if the earth is between, no more blotted out in the middle by the intervening earth than often to considerable degree is its light blotted out upon the moon during an eclipse of the moon, occupying no time in traveling the distance of the stars and back to this earth, because the stars are near, or because there is no velocity of light.

Suppose the Gegenschein could be a reflection of sunlight from anything at a distance less than the distance of the stars. It would have parallax against its background of stars.

Observatory, 17-47:

"The Gegenschein has no parallax."

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At the meeting of the Royal Astronomical Society, Jan. 11, 1878, was read a paper by W. F. Denning. It was, by its implications, one of the most exciting documents in history. The subject was: “Suspected repetitions in meteor-showers.” Mr. Denning listed twenty-two radiants that lasted from three to four months each.

In the year 1799, Humboldt noticed that the paths of meteors, when parts of one display, led back to one point of common origin, or one point from which all the meteors had radiated. This is the radiant-point, or the radiant. When a radiant occurs under a constellation, the meteors are named relatively. In the extraordinary meteoric display of Nov. 13-14, 1833, there was a circumstance that was as extraordinary as the display itself: that, though this earth is supposed to rotate upon its axis, giving to the stars the appearance of revolving nightly, and supposed to revolve around the sun, so affecting the seeming motions of the stars, these meteors of November, 1833, began under the constellation Leo, and six hours later, though Leo had changed position in the sky, had changed with, and seemed still coming from, Leo.

There was no parallax along the great base line from Canada to Florida.

Then these meteors did come from Leo, or parallax, or absence of parallax, is meaningless.

The circumstance of precise position maintained under a moving constellation upon the night of Nov. 13-14, 1833, becomes insignificant relatively to Denning’s data of such synchronization with a duration of months. When a radiant-point remains under Leo or Lyra, night after night, month after month, it is either that something is shifting it, without parallax, in exact coincidence with a doubly shifting constellation, which is so unthinkable that Denning says, “I cannot explain,” or that the constellation is the radiant-point, in which case maintenance of precise position under it is unthinkable if it be far away—

That the stars are near.

Think of a ship, slowly sailing past a seacoast town, firing with smokeless powder, say. Shells from it burst before quite reaching the town, and all explosion-points are in line between the city and the ship, or are traceable to one such radiant. The bombardment continues. The ship moves slowly. Still all points of exploding shells are traceable to one point between the ship and the town. The bombardment goes on and goes on and goes on, and the ship is far from its first position. The point of exploding shells is

still between the ship and the town. Wise men in the town say that the shells are not coming from the ship. They say this because formerly they had said that shells could not come from a ship. They reason: therefore shells are not coming from this ship. They are asked how, then, the point of explosion could so shift exactly in line with the moving ship. If there be a W. F. Denning among them, he will say, “I cannot explain.” But the other wise men will be like Prof. Moulton, for instance. In his books, Prof. Moulton writes a great deal upon the subject of meteors, but he does not mention the meteors that, for months at a time, appear between observers and a shifting constellation.

There are other considerations. The shells are heard to explode. So then they explode near the town. But there is something the matter with that smokeless powder aboard ship: very feeble projectile-force, because also must the shells be exploding near the ship, or the radiant-point would not have the same background, as seen from different parts of the town. Then, in this town, inhabitants, provided they be not wise men, will conclude that, if the explosion-point is near the town, and is also near the ship, the ship is near the town—

Leo and Lyra and Andromeda—argosies that sail the sky and that bombard this earth—and that they are not far away.

And some of us there may be who, instead of trying to speculate upon an unthinkable remoteness, will suffer a sensitiveness to proximity instead; enter a new revolt against a black encompassment that glitters with a light beyond, and wonder what exists in a brilliant environment not far away—and a new anguish for hyperæsthesia upon this earth: a suffocating consciousness of the pressure of the stars.

The Sickle of Leo, from which come the Leonids, gleams like a great question-mark in the sky.

The answer—

But God knows what the answer to anything is.

Perhaps it is that the stars are very close indeed.

12

WE try to have independent expressions. Accept that it is not distance that has held the stars in unchanging position, if occasional, abrupt change of position has been seen at the distance of the stars, and it is implied that the not enormously distant stars are all about equally far away from this earth. or some would be greatly particularized, and that this earth does not move in an orbit, or stars would be seasonally particularized, but would not be, if the stars, in one composition revolve; also if this earth be relatively close to all stars, if many changes of magnitude and of appearance and disappearance have been seen at the distance of the stars, and, if, in the revolutions of the stars, they do not swirl in displacements as bewildering as a blizzard of luminous snowflakes, and if no state of inter-repulsion can be thought of, especially as many stars merge into others, this composition is a substantial, concave formation, or shell-like enclosure in which stars are points. So many of the expressions in the preceding chapter imply others, or all others. However, we have tried to have independent expressions. Of course we realize that the supposed difference between inductive and deductive reasoning is a false demarcation; nevertheless we feel that deductions piled upon other deductions are only architecture, and a great deal in this book expresses the notion that architecture should be kept in its own place. Our general expression is not that there should be no architecture and no mathematics in astronomy, or neo-astronomy; not that there should be no poetry in biology; no chemistry in physiology—but that “pure” architecture or “pure” mathematics, biology, chemistry, has its own field, even though each is inextricably bound up with all the other aspects of being. So of course the very thing that we object to in its extreme manifestations is essential to us in some degree, and the deductive is findable somewhere in every one of our inductions, and we are not insensible to what we think is the gracefulness of some of the converging lines of our own constructions. We are not revolting against aspects, but against emphases and intrusions.

This first part of our work is what we consider neo-astronomic; and now to show that we have no rabidity against the mathematical except when over-emphasized, or misapplied, our language is that all expressions so far developed are to us of about 50% acceptability. A far greater attempted independence is coming, a second part of this work, considering phenomena so different that, if we term the first part of our explorations "neo-astronomic," even some other term by which to designate the field of the second part will have to be thought of, and the word "extra-geographic" seems best for it. If in these two fields, our at least temporary conclusions be the same, we shall be impressed, in spite of all our cynicisms as to "agreements."

Neo-astronomy:

This supposed solar-system—an egg-like organism that is shelled away from external light and life—this central and stationary earth its nucleus—around it a revolving shell, in which the stars are pores, or functioning channels, through some of which spray irradiating fountains said to be "meteoric," but perhaps electric—in which the nebulæ are translucent patches, and in which the many dark parts are areas of opaque, structural substance—and that the stars are not trillions nor even millions of miles away—with proportional reductions of all internal distances, so that the planets are not millions, nor even hundreds of thousands of miles away.

We conceive of the variability of the stars and the nebulæ in terms of the incidence of external light upon a revolving shell and fluctuating passage through light-admitting points and parts. We conceive of all things being rhythmic, so, if stars be pores in a substance, that matrix must be subject to some changes, which may be of different periodicities in different regions. There may be local vortices in the most rigid substance, and so stars, or pores, might revolve around one another, but our tendency is to think that if light companions there be to some stars, they are reflections of light, passing through channels, upon surrounding substance, flickering from one position to another in the small undulations of this environment. So there may be other displacements, differences of magnitude, new openings and closings in a substance that is not absolutely rigid. So "proper motion" might be accounted for, but my own preference is to think, as to such stars as *1830 Groom bridge* and Barnard's "run-away star," that they are planets —also that some of the comets, especially the tailless comets, some of which have been seen to obscure stars, so that evidently they are not wisps

of highly attenuated matter, are planets, all of them not conventionally recognized as planets, because of eccentricity and remoteness from the ecliptic, two departures, however, that many of the minor planets make to great degree. If some of these bodies be planets, the irregularities of some of them are consistent with the irregularities of Jupiter's satellites.

I suggest that a combination of the Ptolemaic and the Tychonic doctrines is in good accord with all the phenomena that we have considered, and with all planetary motions that we have had no occasion to pay much attention to —that the sun, carrying Mercury and Venus with him, revolves at a distance of a few thousand miles, or a few tens of thousands of miles, in a rising and falling spiral around this virtually, but not absolutely, stationary earth, which, according to modern investigations, is more top-shaped than spherical; moon, a few thousand miles away, revolving around this nucleus; and the exterior planets not only revolving around this whole central arrangement, but approaching and receding, in loops, also, quite as they seem, to the remotest of them preposterously near, according to conventional "determinations."

So all the phenomena of the skies may be explained. But all were explained in another way by Copernicus, in another way by Ptolemy, and in still another way by Tycho Brahé. One supposes that there are other ways. If there be a distant object, and, if one school of wise men can by their reasoning processes excellently demonstrate that it is a tree, another school positively determine that it is a house, and other investigators of the highest authoritativeness variously find and prove that it is a cloud or a buffalo or a geranium, why then, their reasoning processes may be admired but not trusted. Right at the heart of our opposition, and right at the heart of our own expressions, is the fatality that there is no reasoning, no logic, no explanation resembling the illusions in the vainglories of common suppositions. There is only the process of correlating to, or organizing or systematizing around, something that is arbitrarily taken for a base, or a dominant doctrine, or a major premise—the process of assimilating with something else, making agreement with something else, or interpreting in terms of something else, which supposed base is never itself final, but was originally an assimilation with still something else.

I typify the result of all examinations of all principles or laws or dominant thoughts, scientific, philosophic, or theologic, in what we find in examining the pronouncement that motion follows the least resistance:

That motion follows least resistance.

How are we to identify least resistance?

If motion follows it.

Then motion goes where motion goes.

If nothing can be positively distinguished from anything else there can be no positive logic, which is attempted positive distinguishment. Consider the popular “base” that Capital is tyranny, and almost utmost wickedness, and that Labor is pure and idealistic. But one’s labor is one’s capital, and capital that is not working is in no sense implicated in this conflict.

Nevertheless we now give up our early suspicion that our whole existence is a leper of the skies, quaking and cringing through space, having the isolation that astronomers suppose, because other celestial forms of being fly from infection—

That, if shelled away from external light and life, it is so surrounded and so protected in the same cause and functioning as that of similarly encompassed forms subsidiary to it—that our existence is super-embryonic.

Darkness of night and of lives and of thoughts—super-uterine entombment. Blackness of the unborn, quasi-illumined periodically by the little sun, which is not light, but less dark.

Then we think of an organism that needs no base, and needs nothing of finality, nor of special guidance to any part local to it, because all parts partake of the pre-determined development of the whole. Consequently our spleens subside, and our frequently unmannerly derisions are hushed by recognitions—that all organizations of thought must be baseless in themselves, and of course be not final, or they could not change, and must bear within themselves those elements that will, in time, destroy them—that seeming solidities that pass away, in phantom-successions, are functionaries relatively to their periods, and express the passage from phase to phase of all things embryonic.

So it is that one who searches for fundamentals comes to bifurcations; never to a base; only to a quandary. In our own field, let there be any acceptable finding. It indicates that the earth moves around the sun. Just as truly it indicates that the sun moves around the earth. What is it that determines which will be accepted, hypnotically blinding the faithful to the other aspect? Our own expression is upon Development as serial reactions to successive Dominants. Let the dominant spirit of an era require that this earth be remote and isolated; Keplerism will support it: let the dominant

change to a spirit of expansion, which would be impossible under such remoteness and isolation; Keplerism will support, or will not especially oppose, the new dominant. This is the essential process of embryonic growth, by which the same protoplasmic substance responds differently in different phases.

But I do not think that all data are so plastic. There are some that will not assimilate with a prevailing doctrine. They can have no effect upon an arbitrary system of thought, or a system subconsciously induced, in its time of dominance: they will simply be disregarded.

We have reached our catalogue of the sights and the sounds to which all that we have so far considered is merely introductory. For them there are either no conventional explanations or poor insufficiencies half-heartedly offered. Our data are glimpses of an epoch that is approaching with far-away explosions. It is vibrating on its edges with the tread of distant space-armies. Already it has pictured in the sky visions that signify new excitements, even now lapping over into the affairs of a self-disgusted, played-out hermitage.

We assemble the data. Unhappily, we shall be unable to resist the temptation to reason and theorize. May Super-embryology have mercy upon our own syllogisms. We consider that we are entitled to at least 13 pages of gross and stupid errors. After that we shall have to explain.

PART II

13

JUNE, 1801—a mirage of an unknown city. It was seen, for more than an hour, at Youghal, Co. Cork, Ireland—a representation of mansions, surrounded by shrubbery and white palings— forests behind. In October, 1796, a mirage of a walled town had been seen distinctly for half an hour at Youghal. Upon March 9, 1797, had been seen a mirage of a walled town.

Feb. 7, 1802—an unknown body that was seen, by Fritsch, of Magdeburg, to cross the sun (*Observatory,* 3-136).

Oct. 10, 1802—an unknown dark body was seen, by Fritsch, rapidly crossing the sun (*Comptes Rendus,* 83-587).

Between 10 and 11 o'clock, morning of Oct. 8, 1803, a stone fell from the sky, at the town of Apt, France. About eight hours later, "some persons believed that they felt an earthquake" (*Rept. B. A.,* 1854-53).

Upon August 11, 1805, an explosive sound was heard at East Haddam, Connecticut. There are records of six prior sounds, as if of explosions, that were heard at East Haddam, beginning with the year 1791, but, unrecorded, the sounds had attracted attention for a century, and had been called the "Moodus" sounds, by the Indians. For the best account of the "Moodus" sounds, see the *Amer. Jour. Sci.,* 39-339. Here a writer tries to show the phenomena were subterranean, but says that there was no satisfactory explanation.

Upon the 2nd of April, 1808, over the town of Pignerol, Piedmont, Italy, a loud sound was heard: in many places in Piedmont an earthquake was felt. In the *Rept. B. A.,* 1854-68, it is said that aerial phenomena did occur; that, before the explosion, luminous objects had been seen in the sky over Pignerol, and that in several of the communes in the Alps aerial sounds, as if of innumerable stones colliding, had been heard, and that quakes had been felt. From April 2 to April 8, forty shocks were recorded at Pignerol; sounds like cannonading were heard at Barga. Upon the 18th of April, two

detonations were heard at La Tour, and a luminous object was seen in the sky. The supposition, or almost absolute belief of most persons is that from the 2nd to the 18th of April this earth had moved far in its orbit and was rotating so that, if one should explain that probably meteors had exploded here, it could not very well be thought that more meteors were continuing to pick out this one point upon a doubly moving planet. But something was specially related to this one local sky. Upon the 19th of April, a stone fell from the sky at Borgo San Donnino, about 40 miles east of Piedmont (*Rept. B. A., 1*860). Sounds like cannonading were heard almost every day in this small region. Upon the 13th of May, a red cloud such as marks the place of a meteoric explosion was seen in the sky. Throughout the rest of the year, phenomena that are now listed as "earthquakes" occurred in Piedmont. The last occurrence of which I have record was upon Jan. 22, 1810.

Feb. 9, 1812—two explosive sounds at East Haddam (*Amer. Jour.* Sci., 39-339).

July 5, 1812—one explosive sound at East Haddam (*Amer. Jour. Sci.*, 39-339).

Oct. 28, 1812—"phantom soldiers" at Havarah Park, near Ripley, England (*Edinburgh Annual Register,* 1812-II-124). When such appearances are explained by meteorologists, they are said to be displays of the aurora borealis. Psychic research explains variously. The physicists say that they are mirages of troops marching somewhere at a distance.

Night of July 31, 1813—flashes of light in the sky of Tottenham, near London (*Year Book of Facts,* 1853-272). The sky was clear. The flashes were attributed to a storm at Hastings, 65 miles away. We note not only that the planet Mars was in opposition at this time (July 30), but in one of the nearest of its oppositions in the 19th century.

Dec. 28, 1813—an explosive sound at East Haddam.

Feb. 2, 1816—a quake at Lisbon. There was something in the sky. Extraordinary sounds were heard, but were attributed to "flocks of birds." But six hours later something was seen in the sky: it is said to have been a meteor (*Rept. B. A.*, 1854-106).

Since the year 1788, many earthquakes, or concussions that were listed as earthquakes, had occurred at the town of Comrie, Perthshire, Scotland. Seventeen instances were recorded in the year 1795. Almost all records of the phenomena of Comrie start with the year 1788, but, in Macara's *Guide to Creiff,* it is said that the disturbances were recorded as far back as the

year 1597. They were slight shocks, and until the occurrence upon Aug. 13, 1816, conventional explanations, excluding all thought of relations with anything in the sky, seemed adequate enough. But, in an account in the London *Times,* Aug. 21, 1816, it is said that, at the time of the quake of August 13, a luminous object, or a "small meteor," had been seen at Dunkeld, near Comrie; and, according to David Milne (*Edin. New Phil, Jour.,* 31-110), a resident of Comrie had reported "a large luminous body, bent like a crescent, which stretched itself over the heavens."

There was another quake in Scotland (Inverness) June 30, 1817. It is said that hot water fell from the sky (*Rept. B. A.,* 1854-112).

Jan. 6, 1818—an unknown body that crossed the sun, according to Loft, of Ipswich; observed about three hours and a half (*Quar. Jour. Roy. Inst.,* 5-117).

Five unknown bodies that were seen, upon June 26, 1819, crossing the sun, according to Gruithuisen (*An. Sci. Disc.,* 1860-411). Also, upon this day, Pastorff saw something that he thought was a comet, which was then somewhere near the sun, but which, according to Olbers, could not have been the comet (Webb, *Celestial Objects,* p. 40).

Upon Aug. 28, 1819, there was a violent quake at Irkutsk, Siberia. There had been two shocks upon Aug. 22, 1813 (*Rept. B. A.,* 1854-101). Upon April 6, 1805, or March 25, according to the Russian calendar, two stones had fallen from the sky at Irkutsk (*Rept. B. A.,* 1860-12). One of these stones is now in the South Kensington Museum, London. Another violent shock at Irkutsk, April 7, 1820 (*Rept. B. A.,* 1854-128).

Unknown bodies in the sky, in the year 1820, February 12 and April 27 (*Comptes Rendus,* 83-314).

Things that marched in the sky—see Arago's *Œuvres,* 11-576, or *Annales de Chimie,* 30-417—objects that were seen by many persons, in the streets of Embrun, during the eclipse of Sept. 7, 1820, moving in straight lines, turning and retracting in the same straight lines, all of them separated by uniform spaces.

Early in the year 1821—and a light shone out on the moon—a bright point of light in the lunar crater Aristarchus, which was in the dark at the time. It was seen, upon the 4th and the 7th of February, by Capt. Kater (*An. Reg.,* 1821-689); and upon the 5th by Dr. Olbers (*Mems. R. A. S.,* 1-159). It was a light like a star, and was seen again, May 4th and 6th, by the Rev. M. Ward and by Francis Bailey (*Mems. R. A. S.,* 1-159). At Cape Town, nights

of Nov. 28th and 29th, 1821, again a star-like light was seen upon the moon (*Phil. Trans.,* 112-237).

Quar. Jour. Roy. Inst., 20-417:

That, early in the morning of March 20, 1822, detonations were heard at Melida, an island in the Adriatic. All day, at intervals, the sounds were heard. They were like cannonading, and it was supposed that they came from a vessel, or from Turkish artillery, practicing in some frontier village. For thirty days the detonations continued, sometimes thirty or forty, sometimes several hundred, a day.

Upon April 13, 1822, it seems, according to description, that clearly enough was there an explosion in the sky of Comrie, and a concussion of the ground—"two loud reports, one apparently over our heads, and the other, which followed immediately, under our feet" (*Edin. New Phil. Jour.,* 31-119).

July 15, 1822—the fall of perhaps unknown seeds from perhaps an unknown world—a great quantity of little round seeds that fell from the sky at Marienwerder, Germany. They were unknown to the inhabitants, who tried to cook them, but found that boiling seemed to have no effect upon them. Wherever they came from, they were brought down by a storm, and two days later, more of them fell, in a storm, in Silesia. It is said that these corpuscles were identified by some scientists as seeds of *Galium spurium,* but that other scientists disagreed. Later more of them fell at Posen, Mecklenburg. See *Bull. des Sci. (math., astro., etc.)* 1-1-298.

Aug. 19, 1822—a tremendous detonation at Melida—others continuing several days.

Oct. 23, 1822—two unknown dark bodies crossing the sun; observed by Pastorff (*An. Sci. Disc.,* 1860-411).

An unknown, shining thing—it was seen, by Webb, May 22, 1823, near the planet Venus *{Nature,* 14-195).

More unknowns, in the year 1823—see *Comptes Rendus,* 49-811 and Webb's *Celestial Objects,* p. 43.

February, 1824—the sounds of Melida.

Upon Feb. 11, 1824, a slight shock was felt at Irkutsk, Siberia (*Rept. B. A.,* 1854-124). Upon February 18, or, according to other accounts, upon May 14, a stone that weighed five pounds, fell from the sky at Irkutsk (*Rept. B. A.,* 1860-70). Three severe shocks at Irkutsk, March 8, 1824 (*Rept. B. A.,* 1854-124).

September, 1824—the sounds of Melida.

At five o'clock, morning of Oct. 20, 1824, a light was seen upon the dark part of the moon, by Gruithuisen. It disappeared. Six minutes later it appeared again, disappeared again, and then flashed intermittently, until 5:30 A.M., when sunrise ended the observations (*Sci. Amer. Sup.*, 7-2712). And, upon Jan. 22, 1825, again shone out the star-like light of Aristarchus, reported by the Rev. J. B. Emmett (*Annals of Philosophy,* 28-338).

The last sounds of Melida of which I have record, were heard in March, 1825. If these detonations did come from the sky, there was something that, for at least three years, was situated over, or was in some other way specially related to, this one small part of this earth's surface, subversively to all supposed principles of astronomy and geodesy. It is said that, to find out whether the sounds did come from the sky, or not, the Prêteur of Melida went into underground caverns to listen. It is said that there the sounds could not be heard.

14

AND our own underground investigations—and whether there is something in the sky or not. We are in a hole in time. Cavern of Conventional Science—walls that are dogmas, from which drips ancient wisdom in a patter of slimy opinions— but we have heard a storm of data outside—

Of beings that march in the sky, and of a beacon on the moon— another dark body crosses the sun. Somewhere near Melida there is cannonading, and another stone falls from the sky, at Irkutsk, Siberia; and unknown grain falls from an unknown world, and there are flashes in the sky when the planet Mars is near.

In a farrago of lights and sounds and forms, I feel the presence of possible classifications that may thread a pattern of attempt to find out something. My attention is attracted by a streak of events that is beaded with little star-like points of light. First we shall find out what we can, as to the moon.

In one of the numbers of the *Observatory,* an eminent authority, in some fields of research, is quoted as to the probable distance of the moon. According to his determinations, the moon is 37 miles away. He explains most reasonably: he is Mr. G. B. Shaw. But by conventional doctrine, the moon is 240,000 miles away. My own idea is that somewhere between determinations by a Shaw and determinations by a Newcomb, we could find many acceptances.

I prefer questionable determinations, myself, or at any rate examinations that end up with questions or considerable latitude. It may be that as to the volcanoes of the moon we can find material for at least a seemingly intelligent question, if no statements are possible as to the size and the distance of the moon. The larger volcanoes of this earth are about three miles in diameter, though the craters of Haleakla, Hawaii, and Aso San, Japan, are seven miles across. But the larger volcanoes of the relatively little moon are said to be sixty miles across, though several are said to be twice that size. And I start off with just about the impression of

disproportionality that I should have, if someone should tell me of a pygmy with ears five feet long.

Is there any somewhat good reason for thinking that the volcanic craters of the little moon are larger than, or particularly different in any other way from, the craters of this earth?

If not, we have a direct unit of measurement, according to which the moon is not 2,160, but about 100, miles in diameter.

How far away does one suppose to be an object with something like that diameter, and of the seeming size of the moon?

The astronomers explain. They argue that gravitation must be less powerful upon the moon than upon this earth, and that therefore larger volcanic formations could have been cast up on the moon. We explain. We argue that volcanic force must be less powerful upon the moon than upon this earth, and that therefore larger volcanic formations could not have been cast up on the moon.

The disproportionality that has impressed me has offended more conventional aesthetics than mine. Prof. See, for instance, has tried to explain that the lunar formations are not craters but are effects of bombardment by vast meteors, which spared this earth, for some reason not made clear. Viscid moon—meteor pops in—up splash walls and a central cone. If Prof. See will jump in swimming some day, and then go back some weeks later to see how big a splash he made, he will have other ideas upon such supposed persistences. The moon would have to have been virtually liquid to fit his theory, because there are no partly embedded, vast, round meteors protruding anywhere.

There have been lights like signals upon the moon. There are two conventional explanations: reflected sunlight and volcanic action. Of course, ultra-conventionalists do not admit that in our own times there has been even volcanic action upon the moon. Our instances will be of lights upon the dark part of the moon, and there are good reasons for thinking that our data do not relate to volcanic action. In volcanic eruptions upon this earth the glow is so accompanied by great volumes of smoke that a clear, definite point of light would seem not to be the appearance from a distance.

For Webb's account of a brilliant display of minute dots and streaks of light, in the Mare Crisium, July 4, 1832, see *Astro. Reg.*, 20-165. I have records of half a dozen similar illuminations here, in about 120 years, all of them when the Mare Crisium was in darkness. There can be no

commonplace explanation for such spectacles, or they would have occurred oftener; nevertheless the Mare Crisium is a wide, open region, and at times there may have been uncommon percolations of sunlight, and I shall list no more of these interesting events that seem to me to have been like carnivals upon the moon.

Dec. 22, 1835—the star-like light in Aristarchus—reported by Francis Bailey—see Proctor's *Myths and Marvels*, p. 329.

Feb. 13, 1836—in the western crater of Messier—according to Gruithuisen (*Sci. Amer. Sup.*, 7-2629)—two straight lines of light; between them a dark band that was covered with luminous points.

Upon the nights of March 18 and 19, 1847, large luminous spots were seen upon the dark part of the moon, and a general glow upon the upper limb, by the Rev. T. Rankin and Prof. Chevalier (*Rept. B. A.*, 1847-18). The whole shaded part of the disc seemed to be a mixture of lights and shades. Upon the night of the 19th, there was a similar appearance upon this earth, an aurora, according to the London newspapers. It looks as if both the moon and this earth were affected by the same illumination, said to have been auroral. I offer this occurrence as indication that the moon is nearby, if moon and earth could be so affected in common.

But by signaling, I mean something like the appearance that was seen, by Hodgson, upon the dark part of the moon, night of Dec. 11, 1847—a bright light that flashed intermittently. Upon the next night it was seen again (*Monthly Notices R. A. S.*, 8-55).

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The oppositions of Mars occur once in about two years and two months. In conventional terms, the eccentricity of the orbit of Mars is greater than the eccentricity of the orbit of this earth, and the part of its orbit that is traversed by this earth in August is nearest the orbit of Mars. When this earth is between Mars and the sun, Mars is said to be in opposition, and this is the position of nearest approach: when opposition occurs in August, that is the most favorable opposition. After that, every two years and about two months, the oppositions are less favorable, until the least favorable of all, in February, after which favorableness increases up to the climacteric opposition in August again. This is a cycle of changing proximities within a period of about fifteen years.

In October, 1862, Lockyer saw a spot like a long train of clouds on Mars, and several days later Secchi saw a spot on Mars. And if that were

signaling, it is very meager material upon which to suppose anything. And May 8-22, 1873—white spots on Mars. But, upon June 17, 1873, two months after nearest approach, but still in the period of opposition of Mars, there was either an extraordinary occurrence, or the extraordinariness is in our interpretation. See *Rept. B. A.*, 1874-272. A luminous object came to this earth, and was seen and heard upon the night of June 17, 1873, to explode in the sky of Hungary, Austria, and Bohemia. In the words of various witnesses, termed according to their knowledge, the object was seen seemingly coming from Mars, or from "the red star in the south," where Mars was at the time. Our data were collected by Dr. Galle. The towns of Rybnik and Ratibor, Upper Silesia, are 15 miles apart. Without parallax, this luminous thing was seen from these points "to emerge and separate itself from the disc of the planet Mars." It so happens that we have a definite observation from one of these towns. At Rybnik, Dr. Sage was looking at Mars, at the time. He saw the luminous object "apparently issue from the planet." There is another circumstance, and for its reception our credulity, or our enlightenment, has been prepared. If this thing did come from Mars, it came from the planet to the point where it exploded in about 5 seconds: from the point of explosion, the sound traveled in several minutes. We have a description from Dr. Sage that indicates that a bolt of some kind, perhaps electric, did shoot from Mars, and that the planet quaked with the shock —"Dr. Sage was looking attentively at the planet Mars, when he thus saw the meteor apparently issue from it, and the planet appear as if it was breaking up and dividing into two parts."

Some of the greatest surprises in commonplace experience are discoveries of the nearness of that which was supposed to be the inaccessibly remote.

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It seems that the moon is close to this earth, because of the phenomenon of "earthshine." The same appearance has been seen upon the planet Venus. If upon the moon, it is light reflecting from this earth and back to this earth, what is it upon Venus? It is "some unexplained optical illusion" says Newcomb (*Popular Astronomy,* p. 296). For a list of more than twenty observations upon this illumination of Venus, see *Rept. B. A.*, 1873-404. It is our expression that the phenomenon is "unexplained" because it does indicate that Venus is millions of miles closer to this earth than Venus "should" be.

Unknown objects have been seen near Venus. There were more than thirty such observations in the eighteenth century, not relating to so many different periods, however. Our own earliest datum is Webb's observation, of May 22, 1823. I know of only one astronomer who has supposed that these observations could relate to a Venusian satellite, pronouncedly visible sometimes, and then for many years being invisible: something else will have to be thought of. If these observations and others that we shall have, be accepted, they relate to unknown bulks that have, from outer space, gone to Venus, and have been in temporary suspension near the planet, even though the shade of Sir Isaac Newton would curdle at the suggestion. If, acceptably, from outer space, something could go to the planet Venus, one is not especially startled with the idea that something could sail out from the planet Venus—visit this earth, conceivably.

In the *Rept. B. A.,* 1852-8, 35, it is said that, early in the morning of Sept. 11, 1852, several persons at Fair Oaks, Staffordshire, had seen, in the eastern sky, a luminous object. It was first seen at 4:15 A.M. It appeared and disappeared several times, until 4:45 A.M., when it became finally invisible. Then, at almost the same place in the sky, Venus was seen, having risen above the eastern horizon. These persons sent the records of their observations to Lord Wrottesley, an astronomer whose observatory was at Wolverhampton. There is published a letter from Lord Wrottesley, who says that at first he had thought that the supposititiously unknown object was Venus, with perhaps an extraordinary halo, but that he had received from one of the observers a diagram giving such a position relatively to the moon that he hesitated so to identify. It was in the period of nearest approach to this earth by Venus, and, since inferior conjunction (July 20, 1852) Venus had been a "morning star." If this thing in the sky were not Venus, the circumstances are that an object came close to this earth, perhaps, and for a while was stationary, as if waiting for the planet Venus to appear above the eastern horizon, then disappearing, whether to sail to Venus or not. We think that perhaps this thing did come close to this earth, because it was, it seems, seen only in the local sky of Fair Oaks. However, if, according to many of our data, professional astronomers have missed extraordinary appearances at reasonable hours, we can't conclude much from what was not reported by them, after 4 o'clock in the morning. I do not know whether this is the origin of the convention or not, but this is the first note I have upon the now standardized explanation that, when a luminous object is seen in the sky at

the time of nearest approach by Venus, it is Venus, attracting attention by her great brilliance, exciting persons, unversed in astronomic matters, into thinking that a strange object had visited this earth. When reports are definite as to motions of a seemingly sailing or exploring, luminous thing, astronomers say that it was a fire-balloon.

In the *Kept. B. A.*, 1856-54, it is said that, according to "Mrs. Ayling and friends," in a letter to Lord Wrottesley, a bright object had been seen in the sky of Petworth, Sussex, night of Aug. 11, 1855. According to description, it rose from behind hills, in the distance, at half past eleven o'clock. It was a red body, or it was a red-appearing construction, because from it were projections like spokes of a wheel; or they were "stationary rays," in the words of the description. "Like a red moon, it rose slowly, and diminished slowly, remaining visible one hour and a half." Upon Aug. 11, 1855, Venus was two weeks from primary greatest brilliance, inferior conjunction occurring upon September 30. The thing could not have been Venus, ascending in the sky, at this time of night. An astonishing thing, like a red moon, perhaps with spokes like a wheel's, might, if reported from nowhere else, be considered something that came from outer space so close to this earth that it was visible only in a local sky, except that it might have been visible in other places, and even half past eleven at night may be an unheard-of hour for astronomers, who specialize upon sunspots for a reason that is clearing up to us. Of course an ordinary fire-balloon could be extraordinarily described.

June 8, 1868—I have not the exact time, but one does suspect that it was early in the evening—an object that was reported from Rad-cliffe Observatory, Oxford. It looked like a comet, but inasmuch as it was reported only from Radcliffe, it may have been in the local sky of Oxford. It seemed to sail in the sky: it moved and changed its course. At first it was stationary; then it moved westward, then southward, then turning north, visible four minutes. See *Eng. Mec.*, 7-351. According to a correspondent to the *Birmingham Gazette*, May 28, 1868, there had been an extraordinary illumination upon Venus, some nights before: a red spot, visible for a few seconds, night of May 27. In the issue of the *Gazette*, of June 1st, someone else writes that he saw this light appearing and disappearing upon Venus. Upon March 15, Browning had seen something that looked like a little shaft of light from Venus (*Eng. Mec.*, 40-130); and upon April 6, Webb had seen a similar appearance (*Celestial Objects*, p. 57). At the time of the

appearance at Oxford, Venus was in the period of nearest approach (inferior conjunction July 16, 1868).

I think, myself, that there was one approximately great, wise astronomer. He was Tycho Brahé. For many years, he would not describe what he saw in the sky, because he considered it beneath his dignity to write a book. The undignified, or more or less literary, or sometimes altogether too literary, astronomers, who do write books, uncompromisingly say that when a luminous object is said to have moved to greater degree than could be considered illusory, in a local sky of this earth, it is a fire-balloon. It is not possible to find in the writings of astronomers who so explain, mention of the object that was seen by Coggia, night of Aug. 1, 1871. It seems that this thing was not far away, and did appear only in a local sky of this earth, and if it did come from outer space, how it could have "boarded" this earth, if this earth moves at a rate of 19 miles a second, or 1 mile a second, is so hard to explain that why Proctor and Hind, with their passionate itch for explaining, never took the matter up, I don't know. Upon Aug. 1, 1871, an unknown luminous object was seen in the sky of Marseilles, by Coggia (*Comptes Rendus*, 73-398). According to description, it was a magnificent red object. It appeared at 10:43 P.M., and moved eastward, slowly, until 10:52:30. It stopped—moved northward, and again, at 10:59:30, was stationary. It turned eastward again, and, at 11:3:20, disappeared, or fell behind the horizon. Upon this night Venus was within three weeks of primary greatest brilliance, inferior conjunction occurring upon Sept. 25, 1871.

15

ONE repeating mystery—the mystery of the local sky. How, if this earth be a moving earth, could anything sail to, fall to, or in any other way reach this earth, without being smashed into fine particles by the impact?

This earth is supposed to rip space at a rate of about 19 miles a second.

Concepts smash when one tries to visualize such an accomplishment.

Now, three times over, we shall have other aspects of this one mystery of the local sky. First we shall take up data upon seeming relation between a region of this earth that is subject to earthquakes, or so-called earthquakes, and appearances in the sky of this especial region, and the repeating falls of objects and substances from this local sky and nowhere else at the times.

We have had records of quakes that occurred at Irkutsk, Siberia, and of stones that fell from the sky to Irkutsk. Upon March 8, 1829, a severe quake, preceded by clattering sounds, was felt at Irkutsk. There was something in the sky. Dr. Erman, the geologist, was in Irkutsk, at the time. In the *Report of the British Association,* 1854-20, it is said that, in Dr. Erman's opinion, the sounds that preceded the quake were in the sky.

The situation at Comrie, Perthshire, is similar. A stone fell, May 17, 1830, in the "earthquake region" around Comrie. It fell at Perth, 22 miles from Comrie. See *Fletcher's List*, p. 100. Upon Feb. 15, 1837, a black powder fell upon the Comrie region (*Edin. New Phil. Jour.,* 31-293). Oct. 12, 1839—a quake at Comrie. According to the Rev. M. Walker, of Comrie, the sky, at the time, was "peculiarly strange and alarming, and appeared as if hung with sackcloth." In Mallet's Catalogue (*Rept. B. A.,* 1854-290) it is said that, throughout the month of October, shocks were felt at Comrie, sometimes slight and sometimes severe—"like distant thunder or reports of artillery"—"the noise sometimes seemed to be high in the air, and was often heard without any sensible shock." Upon the 23rd of October, occurred the most violent quake in the whole series of phenomena at Comrie. See the *Edin. New Phil. Jour.,* vol. 32. All data in this publication were collected by David Milne. According to the Rev. M. Maxton, of Foulis Manse, ten miles

from Comrie, rattling sounds were heard in the sky, preceding the shock that was felt. In vol. 33, p. 373, of the *Journal,* someone who lived seven miles from Comrie is quoted: “In every case, I am inclined to say that the sound proceeded not from undergound. The sound seemed high in the air.” Someone who lived at Gowrie, forty miles from Comrie, is quoted: “The most general opinion seems to be that the noise accompanying the concussion proceeded from above.” See vol. 34, p. 87: another impression of explosion overhead and concussion underneath: “The noises heard first seemed to be in the air, and the rumbling sound in the earth.” Milne’s own conclusion—“It is plain that there are, connected with the earthquake shocks, sounds both in the earth and in the air, which are distinct and separate.” If, upon the 23rd of October, 1839, there was a tremendous shock, not of subterranean origin, but from a great explosion in the sky of Comrie, and if this be accepted, there will be concussions somewhere else. The “faults” of dogmas will open; there will be seismic phenomena in science. I have a feeling of a conventional survey of this Scottish sky: vista of a fair, blue, vacant expanse—our suspicions daub the impression with black alarms—but also do we project detonating stimulations into the fair and blue, but unoccupied and meaningless. One cannot pass this single occurrence by, considering it only in itself: it is one of a long series of quakes of the earth at Comrie and phenomena in the sky at Comrie. We have stronger evidence than the mere supposition of many persons, in and near Comrie, that, upon Oct. 23, 1839, something had occurred in the sky, because sounds seemed to come from the sky. Milne says that clothes, bleaching on the grass, were entirely covered with black particles which presumably had fallen from the sky. The shocks were felt in November: in November, according to Milne, a powder like soot fell from the sky, upon Comrie and surrounding regions. In his report to the British Association, 1840, Milne, reviewing the phenomena from the year 1788, says: “Occasionally there was a fall of fine, black powder.”

Jan. 8, 1840—sounds like cannonading, at Comrie, and a crackling sound in the air, according to some of the residents. Whether they were sounds of quakes or concussions that followed explosions, 247 occurrences, between Oct. 3, 1839, and Feb. 14, 1841, are listed in the *Edin. New Phil. Jour.*, 32-107. It looks like bombardment, and like most persistent bombardment—from somewhere—and the frequent fall from the sky of the debris of explosions. Feb. 18, 1841— a shock and a fall of discolored rain at Comrie

(*Edin. New Phil. Jour.,* 35-148). See Roper's *List of Earthquakes*—year after year, and the continuance of this seeming bombardment in one small part of the sky of this earth, though I can find records only of dates and no details. However, I think I have found record of a fall from the sky of debris of an explosion, more substantial than finely powdered soot, at Crieff, which is several miles from Comrie. In the *Amer. Jour. Sci.,* 2-28-275, Prof. Shepard tells a circumstantial story of an object that looked like a lump of slag, or cinders, reported to have fallen at Crieff. Scientists had refused to accept the story, upon the grounds that the substance was not of "true meteoric material." Prof. Shepard went to Crieff and investigated. He gives his opinion that possibly the object did fall from the sky. The story that he tells is that, upon the night of April 23, 1855, a young woman, in the home of Sir William Murray, Achterlyre House, Crieff, saw, or thought she saw, a luminous object falling, and picked it up, dropping it, because it was hot, or because she thought it was hot.

For a description, in a letter, presumably from Sir William Murray, or some member of his family, see *Year Book of Facts,* 1856-273. It is said that about 12 fragments of scorious matter, hot and emitting a sulphurous odor, had fallen.

In Ponton's *Earthquakes,* p. 118, it is said that, upon the 8th of October, 1857, there had been, in Illinois, an earthquake, preceded by "a luminous appearance, described by some as a meteor and by others as vivid flashes of lightning." Though felt in Illinois, the center of the disturbance was at St. Louis, Mo. One notes the misleading and the obscuring of such wording: in all contemporaneous accounts there is no such indefiniteness as one description by "some" and another notion by "others." Something exploded terrifically in the sky, at St. Louis, and shook the ground "severely" or "violently," at 4:20 A.M., Oct. 8, 1857. According to Timbs' *Year Book of Facts,* 1858-271, "a blinding meteoric ball from the heavens" was seen. "A large and brilliant meteor shot across the heavens" (*St. Louis Intelligencer,* October 8). Of course the supposed earthquake was concussion from an explosion in the sky, but our own interest is in a series that is similar to others that we have recorded. According to the *New York Times,* October 12, a slight shock was said to have been felt four hours before the great concussion, and another three days before. But see Milne's *Catalog of Destructive Earthquakes*—not a mention of anything that would lead one away from safe and standardized suppositions. See *Bull. Seis. Soc. Amer.,* 3-

68—here the “meteor” is mentioned, but there is no mention of the preceding concussions. Time after time, in a period of about three days, concussions were felt in and around St. Louis. One of these concussions, with its “sound like thunder or the roar of artillery” (*New York Times*, October 8) was from an explosion in the sky. If the others were of the same origin—how could detonating meteors so repeat in one small local sky, and nowhere else, if this earth be a moving body? If it be said that only by coincidence did a meteor explode over a region where there had been other quakes, here is the question:

How many times can we accept that explanation as to similar series?

. . . . . .

In the *Proceedings of the Society for Psychical Research*, 19-144, a correspondent writes that, in Herefordshire, Sept. 24, 1854, upon a day that was “perfectly still, sky cloudless,” he had heard sounds like the discharges of heavy artillery, at intervals of about two minutes, continuing several hours. Again the “mystery of the local sky”—if these sounds did come from the sky. We have no data for thinking that they did.

In the London *Times*, Nov. 9, 1858, a correspondent writes that, in Cardiganshire, Wales, he had, in the autumn of 1855, often heard sounds like the discharges of heavy artillery, two or three reports rapidly, and then an interval of perhaps 20 minutes, also with long intervals, sometimes of days and sometimes of weeks, continuing throughout the winter of 1855-56. Upon the 3rd of November, 1858, he had heard the sounds again, repeatedly, and louder than they had been three years before. In the *Times*, November 12, someone else says that, at Dolgelly, he, too, had heard the “mysterious phenomenon,” on the 3rd of November. Someone else—that, upon October 13, he had heard the sounds at Swansea. “The reports, as if of heavy artillery, came from the west, succeeding each other at apparently regular intervals, during the greater part of the afternoon of that day. My impression was that the sounds might have proceeded from practicing at Milford, but I ascertained, the following day, that there had been no firing of any kind there.” Correspondent to the *Times*, November 20—that, with little doubt, the sounds were from artillery practice at Milford. He does not mention the investigation as to the sounds of October 13, but says that there had been cannon-firing, upon November 3rd, at Milford. *Times*, December 1 —that most of the sounds could be accounted for as sounds of blasting in quarries. *Daily News*, November 16—that similar sounds had been heard, in

1848, in New Zealand, and were results of volcanic action. *Standard,* November 16—that the "mysterious noise" must have been from Devonport, where a sunken rock had been blown up. So, with at least variety these sounds were explained. But we learn that the series began before October 13. Upon the evening of September 28, in the Dartmoor District, at Crediton, a rumbling sound was heard. It was not supposed to be an earthquake, because no vibration of the ground was felt. It was thought that there had been an explosion of gunpowder. But there had been no such terrestrial explosion. About an hour later another explosive sound was heard. It was like all the other sounds, and in one place was thought to be distant cannonading—terrestrial cannonading. See *Quar. Jour. Geolog. Soc. of London,* vol. 15.

Somewhere near Barisal, Bengal, were occurring just such sounds as the sounds of Cardiganshire, which were like the sounds of Melida. In the *Proc. Asiatic Soc. of Bengal,* November, 1870, are published letters upon the Barisal Guns. One writer says that the sounds were probably booming of the surf. Someone else points out that the sounds, usually described as "explosive," were heard too far inland to be traced to such origin. A clear, calm day, in December, 1871—in *Nature,* 53-197, Mr. G. B. Scott writes that, in Bengal, he had heard "a dull, muffled boom, as if of distant cannon"—single detonations, and then two or three in quicker succession.

In the London *Times,* Jan. 20, 1860, several correspondents write as to a sound "resembling the discharge of a gun high in the air" that was heard near Reading, Berkshire, England, Jan. 17, 1860. See the *Times,* January 24th. To say that a meteor had exploded would, at present, well enough account for this phenomenon.

Sounds like those that were heard in Herefordshire, Sept. 24, 1854, were heard later. In the *English Mechanic,* 100-279, it is said that, upon Nov. 9, 1862, the Rev. T. Webb, the astronomer, of Hardwicke, fifteen miles west of Hereford, heard sounds that he attributed to gunfire at Milford Haven, about 85 miles from Hardwicke. Upon Aug. 1, 1865, Mr. Webb saw flashes upon the horizon, at Hardwicke, and attributed them to gunfire at Tenby, upon occasion of a visit by Prince Arthur. Tenby, too, is about 85 miles from Hardwicke. There were other phenomena in a region centering around Hereford and Worcester. Upon Oct. 6, 1863, there was a disturbance that is now listed as an earthquake; but in the London newspapers so many reports upon this occurrence state that a great explosion had been thought to occur,

and that the quake was supposed to be an earthquake of subterranean origin only after no terrestrial explosion could be heard of, that the phenomenon is of questionable origin. There was a similar concussion in about the same region, Oct. 30, 1868. Again the shock was widely attributed to a great explosion, perhaps in London, and again was supposed to have been an earthquake when no terrestrial explosion could be heard of.

. . . . . .

Arcana of Science, 1829-196:

That, near Mhow, India, Feb. 27, 1828, fell a stone "perfectly similar" to the stone that fell near Allahabad, in 1802, and a stone that fell near Mooradabad, in 1808. These towns are in the Northwestern Provinces of India.

I have looked at specimens of these stones, and in my view they are similar. They are of brownish rock, streaked and spotted with a darker brown. A stone that fell at Chandakopur, in the same general region, June 6, 1838, is like them. All are as much alike as "erratics" that, because they are alike, geologists ascribe to the same derivation, stationary relatively to the places in which they are found.

It seems acceptable that, upon July 15 and 17, 1822, and then upon a later date, unknown seeds fell from the sky to this earth. If these seeds did come from some other world, there is another mystery as well as that of repetition in a local sky of this earth. How could a volume of seeds remain in one aggregation; how could the seeds be otherwise than scattered from Norway to Patagonia, if they met in space this earth, and if this earth be rushing through space at a rate of 19 miles a second? It may be that the seeds of 1822 fell again. According to Kaemtz (*Meteorology*, p. 465) yellowish brown corpuscles, some round, a few cylindrical, were found upon the ground, June, 1830, near Griesau, Silesia. Kaemtz says that they were tubercules from roots of a well-known Silesian plant—stalk of the plant dries up; heavy rain raises these tubercules to the ground—persons of a low order of mentality think that the things had fallen from the sky. Upon the night of March 24-25, 1852, a great quantity of seeds did fall from the sky, in Prussia, in Heinsberg, Erklenz, and Juliers, according to M. Schwann, of the University of Liege, in a communication to the Belgian Academy of Science (*La Belgique Horticole*, 2-319).

In *Comptes Rendus*, 5-549, is Dr. Wartmann's account of water that fell from the sky, at Geneva. At nine o'clock, morning of Aug. 9, 1837, there

were clouds upon the horizon, but the zenith was clear. It is not remarkable that a little rain should fall now and then from a clear sky: we shall see wherein this account is remarkable. Large drops of warm water fell in such abundance that people were driven to shelter. The fall continued several minutes and then stopped. But then, several times during an hour, more of this warm water fell from the sky. *Year Book of Facts*, 1839-262 —that upon May 31, 1838, lukewarm water in large drops fell from the sky, at Geneva. *Comptes Rendus*, 15-290—no wind and not a cloud in the sky—at 10 o'clock, morning of May 11, 1842, warm water fell from the sky at Geneva, for about six minutes; five hours later, still no wind and no clouds, again fell warm water, in large drops; falling intermittently for several minutes.

In *Comptes Rendus*, 85-681, is noted a succession of falls of stones in Russia: June 12, 1863, at Buschof, Courland; Aug. 8, 1863, at Pillitsfer, Livonia; April 12, 1864, at Nerft, Courland. Also—see *Fletcher's List*—a stone that fell at Dolgovdi, Volhynia, Russia, June 26, 1864. I have looked at specimens of all four of these stones, and have found them all very much alike, but not of uncommon meteoritic material: all gray stones, but Pillitsfer is darker than the others, and in a polished specimen of Nerft, brownish specks are visible.

In the *Birmingham Daily Post*, June 14, 1858, Dr. C. Mansfield Ingleby, a meteorologist, writes: "During the storm on Saturday (12th) morning, Birmingham was visited by a shower of aerolites. Many hundreds of thousands must have fallen, some of the streets being strewn with them." Someone else writes that many pounds of the stones had been gathered from awnings, and that they had damaged greenhouses, in the suburbs. In the *Post*, of the 15th, someone else writes that, according to his microscopic examinations, the supposed aerolites were only bits of the Rowley ragstone, with which Birmingham was paved, which had been washed loose by the rain. It is not often that sentiment is brought into meteorology, but in the *Report of the British Association*, 1864-37, Dr. Phipson explains the occurrence meteorologically, and with an unconscious tenderness. He says that the stones did fall from the sky, but that they had been carried in a whirlwind from Rowley, some miles from Birmingham. So we are to sentimentalize over the stones in Rowley that had been torn, by unfeeling paviers, from their companions of geologic ages, and exiled to the pavements of Birmingham, and then some of these little bereft companions,

rising in a whirlwind and traveling, unerringly, if not miraculously, to rejoin the exiles. More dark companions. It is said that they were little black stones.

They fell again from the sky, two years later. In *La Science Pour Tous*, June 19, 1860, it is said that, according to the *Wolver-hampton Advertiser,* a great number of little black stones had fallen, in a violent storm, at Wolverhampton. According to all records findable by me no such stones have ever fallen anywhere in Great Britain, except at Birmingham and Wolverhampton, which is 13 miles from Birmingham.

Eight years after the second occurrence, they fell again. *English Mechanic,* July 31, 1868—that stones "similar to, if not identical with the well-known Rowley ragstones" had fallen in Birmingham, having probably been carried from Rowley, in a whirlwind.

We were pleased with Dr. Phipson's story, but to tell of more of the little dark companions rising in a whirlwind and going unerringly from Rowley to rejoin the exiles in Birmingham is over-doing. That's not sentiment: that's mawkishness.

In the *Birmingham Daily Post,* May 30, 1868, is published a letter from Thomas Plant, a writer and lecturer upon meteorological subjects. Mr. Plant says, I think, that for one hour, morning of May 29, 1868, stones fell, in Birmingham, from the sky. His words may be interpretable in some other way, but it does not matter: the repeating falls are indication enough of what we're trying to find out—"From nine to ten, meteoric stones fell in immense quantities in various parts of town." "They resembled, in shape, broken pieces of Rowley ragstone . . . in every respect they were like the stones that fell in 1858." In the *Post,* June 1, Mr. Plant says that the stones of 1858 did fall from the sky, and were not fragments washed out of the pavement by rain, because many pounds of them had been gathered from a platform that was 20 feet above the ground.

It may be that for days before and after May 29, 1868, occasional stones fell from some unknown region stationary above Birmingham. In the *Post,* June 2, a correspondent writes that, upon the first of June, his niece, while walking in a field, was struck by a stone that injured her hand severely. He thinks that the stone had been thrown by some unknown person. In the *Post,* June 4, someone else writes that his wife, while walking down a lane, upon May 24th, had been cut on the head by a stone. He attributes this injury to

stone-throwing by boys, but does not say that anyone had been seen to throw the stone.

Symons' Met. Mag., 4-137:

That, according to the *Birmingham Gazette*, a great number of small, black stones had been found in the streets of Wolverhampton, May 25, 1869, after a severe storm. It is said that the stones were precisely like those that had fallen in Birmingham, the year before, and resembled Rowley ragstone outwardly, but had a different appearance when broken.

16

UPON page 287, *Popular Astronomy,* Newcomb says that it is beyond all "moral probability" that unknown worlds should exist in such numbers as have been reported, and should be seen crossing the solar disc only by amateur observers and not by skilled astronomers.

Most of our instances are reports by some of the best-known astronomers.

Newcomb says that for fifty years, prior to his time of writing (edition of 1878) the sun had been studied by such men as Schwabe, Carrington, Secchi, and Spörer, and that they had never seen unknown bodies cross the sun—

Aug. 30, 1863—an unknown body that was seen by Spörer to cross the sun (Webb, *Celestial Objects*, p. 45).

Sept. 1, 1859—two star-like objects that were seen by Carrington to cross the sun (*Monthly Notices*, 20-13, 15, 88).

Things that crossed the sun, July 31, 1826, and May 26, 1828— see *Comptes Rendus*, 83-623, and Webb's *Celestial Objects*, p. 40. From Sept. 6 to Nov. 1, 1831, an unknown luminous object was seen every cloudless night, at Geneva, by Dr. Wartmann and his assistants (*Comptes Rendus*, 2-307). It was reported from nowhere else. What all the other astronomers were doing, September-October, 1831, is one of the mysteries that we shall not solve. An unknown, luminous object that was seen, from May 11 to May 14, 1835, by Cacciatore, the Sicilian astronomer (*Amer. Jour. Sci.*, 31-158). Two unknowns that, according to Pastorff, crossed the sun, Nov. 1, 1836, and Feb. 16, 1837 (*An. Sci. Disc.*, 1860-410)—De Vico's unknown, July 12, 1837 (*Observatory*, 2-424)—observation by De Cuppis, Oct. 2, 1839 (C. *R.*, 83-314)—by Scott and Wray, last of June, 1847; by Schmidt, Oct. 11, 1847 (*C. R.*, 83-623)—two dark bodies that were seen, Feb. 5, 1849, by Brown, of Deal (*Rec. Sci.*, 1-138)—object watched by Sidebotham, half an hour, March 12, 1849, crossing the sun (*C. R.*, 83-622)—Schmidt's unknown, Oct. 14, 1849 (*Observatory*, 3-137)—and an object that was watched, four nights in October, 1850, by James Ferguson, of the

Washington Observatory. Mr. Hind believed this object to be a Trans-Neptunian planet, and calculated for it a period of 1,600 years. Mr. Hind was a great astronomer, and he miscalculated magnificently: this floating island of space was not seen again (*Smithson. Miscell. Cols.*, 20-20).

About May 30, 1853—a black point that was seen against the sun, by Jaennicke (*Cosmos*, 20-64).

A procession—in the *Rept. B. A.*, 1855-94, R. P. Greg says that, upon May 22, 1854, a friend of his saw, near Mercury, an object equal in size to the planet itself, and behind it an elongated object, and behind that something else, smaller and round.

June 11, 1855—a dark body of such size that it was seen, without telescopes, by Ritter and Schmidt, crossing the sun (*Observatory*, 3-137). Sept. 12, 1857—Ohrt's unknown world; seemed to be about the size of Mercury (*C. R.*, 83-623)—Aug. 1, 1858—unknown world reported by Wilson, of Manchester (*Astro. Reg.*, 9-287).

I am not listing all the unknowns of a period; perhaps the object reported by John H. Tice, of St. Louis, Mo., Sept. 15, 1859, should not be included; Mr. Tice was said not to be trustworthy —but who has any way of knowing? However, I am listing enough of these observations to make me feel like a translated European of some centuries ago, relatively to a wider existence—lands that may be the San Salvadors, Greenlands, Madagascars, Cubas, Australias of extra-geography, all of them said to have crossed the sun, whereas the sun may have moved behind some of them—

Jan. 29, 1860—unknown object, of planetary size, reported from London, by Russell and three other observers (*Nature*, 15-505). Summer of 1860—see *Sci. Amer.*, 35-340, for an account, by Richard Covington, of an object that, without a telescope, he saw crossing the sun. An unknown world, reported by Loomis, of Manchester, March 20, 1862 (*Monthly Notices*, 22-232)—a newspaper account of an object that was seen crossing the sun, Feb. 12, 1864, by Samuel Beswick, of New York (*Astro. Reg.*, 2-161)—unknown that was seen, March 18, 1865, at Constantinople (*L'Ann. Sci.*, 1865-16)—unknown "cometic objects" that were seen, Nov. 4, 9, and 18, 1865 (*Monthly Notices*, 26-242).

Most of these unknowns were seen in the daytime. Several reflections arise. How could there be stationary regions over Irkutsk, Comrie, and Birmingham, and never obscure the stars—or never be seen to obscure the stars? A heresy that seems too radical for me is that they may be beyond the

nearby stars. A more reasonable idea is that if nightwatchmen and policemen and other persons who do stay awake nights, should be given telescopes, something might be found out. Something else that one thinks of is that, if so many unknowns have been seen crossing the sun, or crossed by the sun, others not so revealed must exist in great numbers, and that instead of being virtually blank, space must be archipelagic.

Something that was seen at night; observer not an astronomer—

Nov. 6, 1866—an account, in the London *Times*, Jan. 2, 1867, by Senor De Fonblanque, of the British Consulate, at Cartagena, U. S. Colombia, of a luminous object that moved in the sky. “It was of the magnitude, color, and brilliance of a ship’s red light, as seen at a distance of 200 yards.” The object was visible three minutes, and then disappeared behind buildings. De Fonblanque went to an open space to look for it, but did not see it again.

17

IF we could stop to sing, instead of everlastingly noting vol. this and p. that, we could have the material of sagas—of the bathers in the sun, which may be neither intolerably hot nor too uncomfortably cold; and of the hermit who floats across the moon; of heroes and the hairy monsters of the sky. I should stand in public places and sing our data—sagas of parades and explorations and massacres in the sky—having a busy band of accompanists, who set off fireworks, and send up balloons, and fire off explosives at regular intervals—extra-geographic songs of boiling lakes and floating islands—extra-sociologic meters that express the tramp of space-armies upon inter-planetary paths covered with little black pebbles—biologic epics of the clouds of mammoths and horses and antelopes that once upon a time fell from the sky upon the northern coast of Siberia—

Song that interprets the perpendicular white streaks in the repeating mirages at Youghal—the rhythmic walruses of space that hang on by their tusks to the edges of space-islands, sometimes making stars variable as they swing in cosmic undulations—so a round space-island with its border of gleaming tusks, and we frighten children with the song of an ogre's head, with a wide-open mouth all around it—fairy lands of the little moon, and the tiny civilizations in rocky cups that are sometimes drained to their slums by the wide-mouthed ogres. The Maelstrom of Everlasting Catastrophe that overhangs Genoa, Italy—and twines its currents around a living island. The ground underneath quakes with the struggle —then the fall of blood—and the fall of blood—three days the fall of blood from the broken red brooks of a living island whose mutilations are scenery—

But after all, it may be better that we go back to *Rept. B. A.* —see vol. 1849, p. 46—a stream of black objects, crossing the sun, watched, at Naples, May 11, 1845, by Capocci and other astronomers—things that may have been seeds.

A great number of red points in the sky of Urrugne, July 9, 1853 (*An. Soc. Met. de France,* 1853-227). *Astro. Reg.,* 5-179—C. L. Prince, of

Uckfield, writes that, upon June 11, 1867, he saw objects crossing the field of his telescope. They were seeds, in his opinion.

Birmingham Daily Post, May 31, 1867:

Mr. Bird, the astronomer, writes that, about 11 A.M., May 30, he saw unknown forms in the sky. In his telescope, which was focused upon them and upon the planet Venus, they appeared to be twice the size of Venus. They were far away, according to focus; also, it may be accepted that they were far away because an occasional cloud passed between them and this earth. They did not move like objects carried in the wind: all did not move in the same direction, and they moved at different speeds.

"All of them seemed to have hairy appendages, and in many cases a distinct tail followed the object and was highly luminous."

Flashes that have been seen in the sky—and they're from a living island that wags his luminous peninsula. Hair-like substances that have fallen to this earth—a meadow has been shorn from a monster's mane. My animation is the notion that it is better to think in tentative hysteria of pairs of vast things, traveling like a North and South America through the sky, perhaps one biting the other with its Gulf of Mexico, than to go on thinking that all things that so move in the sky are seeds, whereas all things that swim in the sea are not sardines.

In the *Post*, June 3, 1867, Mr. W. H. Wood writes that the objects were probably seeds. *Post*, June 5—Mr. Bird says that the objects were not seeds. "My intention was simply to describe what was seen, and the appearance was certainly that of meteors." He saves himself, in the annals of extra-geography—"whether they were meteors of the ordinary acceptation, is another matter."

And the planet Venus, and her veil that is dotted with blue-fringed cupids—in the *Astronomical Register*, 7-138, a correspondent writes, from Northampton, that, upon May 2, 1869, he was looking at Venus, and saw a host of shining objects, not uniform in size. He thinks that it is unlikely that so early in the spring could these objects be seeds. He watched them about an hour and twenty minutes—"many of the larger ones were fringed on one side, the fringe appearing somewhat bluish." Or that it is better even to sentimentalize than to go on stupidly thinking that all such things in the sky are seeds, whereas all things in the sea are not the economically adjusting little forms without which critics of underground traffic in New York

probably could not express themselves —the planet Venus—she approaches this lordly earth—the blue-fringed ecstasies that suffuse her skies.

With the phenomena of Aug. 7, 1869, I suspect that the "phantom soldiers" that have been seen in the sky, may have been reflections from, or mirages of, things or beings that march, in military formations, in space. In *Popular Astronomy,* 3-159, Prof. Swift writes that, at Mattoon, Ill., during the eclipse of the sun, of Aug. 7, 1869, he had seen, crossing the moon, objects that he thought were seeds. If they were seeds, also there happened to be seeds in the sky of Ottumwa, Iowa: here, crossing the visible part of the sun, twenty minutes before totality of the eclipse, Prof. Himes and Prof. Zentmayer saw objects that marched, or that moved, in straight, parallel lines (*Les Mondes,* 21-241). In the *Jour. Frank. Inst.,* 3-58-214, it is said that some of these objects moved in one direction across the moon, and that others moved in another direction across another part of the moon, each division moving in parallel lines. If these things were seeds, also there happened to be seeds in the sky, at Shelleyville, Kentucky. Here were seen, by Prof. Winlock, Alvan Clark, Jr., and George W. Dean, things that moved across the moon, during the eclipse, in parallel, straight lines (*Pop. Astro.,* 2-332).

Whatever these things may have been, I offer another datum indicating that the moon is nearby: that these objects probably were not, by coincidence, things in three widely separated skies, parallelness giving them identity in two of the observations; and, if seen, without parallax, from places so far apart, against the moon, were close to the moon; that observation of such detail would be unlikely if they were near a satellite 240,000 miles away—unless, of course, they were mountain-sized.

It may be that out from two floating islands of space, two processions had marched across the moon. *Observatory,* 3-137—that, at St. Paul's Junction, Iowa, four persons had seen, without telescopes, a shining object close to the sun and moon, apparently; that, with a telescope, another person had seen another large object, crescentically illumined, farther from the sun and moon in eclipse. See *Nature,* 18-663, and *Astro. Reg.,* 7-227.

I have many data upon the fall of organic matter from the sky. Because of my familiarity with many records, it seems no more incredible that up in the seemingly unoccupied sky there should be hosts of living things than that the seeming blank of the ocean should swarm with life. I have many notes upon a phosphorescence, or electric condition of things that fall from the

sky, for instance the highly luminous stones of Dhurmsulla, which were intensely cold—

Amer. Jour. Sci., 2-28-270:

It is said that, according to investigations by Prof. Shepard, a luminous substance was seen falling slowly, by Sparkman R. Scriven, a young man of seventeen, at his home, in Charleston, S. C., Nov. 16, 1857. It is said that the young man saw a fiery, red ball, the size and shape of an orange, strike a fence, breaking, and disappearing. Where this object had struck the fence, was found "a small bristling mass of black fibers." According to Prof. Shepard, it was "a confused aggregate of short clippings of the finest black hair, varying in length from one tenth to one third of an inch." Prof. Shepard says that this substance was not organic. It seems to me that he said this only because of the coercions of his era. My reason for so thinking is that he wrote that when he analyzed these hairs they burned away, leaving grayish skeletons, and that they were "composed in part of carbon," and burned with an odor "most nearly bituminous."

For full details of the following circumstances, see *Comptes Rendus*, 13-215, and *Rept. B. A.*, 1854-302:

Feb. 17, 1841—the fall, at Genoa, Italy, of a red substance from the sky—another fall upon the 18th—a slight quake, at 5 P.M., February 18th—another quake, six hours later—fall of more of the red substance, upon the 19th. Some of this substance was collected and analyzed by M. Canobbia, of Genoa. He says it was oily and red.

18

IN a pamphlet entitled *Wonderful Phenomena*, by Curtis Eli, is the report of an occurrence, or of an alleged occurrence, that was investigated by Mr. Addison A. Sawin, a spiritualist. He interpreted in the only way that I know of, and that is the psychochemic process of combining new data with preconceptions with which they seem to have affinity. It is said that, at Warwick, C. W., Oct. 3, 1843, somebody named Charles Cooper heard a rumbling sound in the sky, and saw a cloud, under which were three human forms, "perfectly white," sailing through the air above him, not higher than the tree-tops. It is said that the beings were angels. They were male angels. That is orthodox. The angels wafted through the air, but without motions of their own, and an interesting observation is that they seemed to have belts around their bodies—as if they had been let down from a vessel above, though this poor notion is not suggested in the pamphlet. They "moaned." Cooper called to some men who were laboring in another field, and they saw the cloud, but did not see the forms of living beings under it. It is said that a boy had seen the beings in the air, "side by side, making a loud and mournful noise." Another person, who lived six miles away, is quoted: "he saw the clouds and the persons and heard the sounds." Mr. Sawin quotes others, who had seen "a remarkable cloud," and had heard the sounds, but had not seen the angels. He ends up: "Yours is the glorious hope of the resurrection of the soul." The gloriousness of it is an inverse function of the dolefulness of it: Sunday Schools will not take kindly to the doctrine—be good and you will moan forever. One supposes that the glorious hope colored the whole investigation.

Some day I shall publish data that lead me to suspect that many appearances upon this earth that were once upon a time interpreted by theologians and demonologists, but are now supposed to be the subject-matter of psychic research, were beings and objects that visited this earth, not from a spiritual existence, but from outer space. That extra-geographic conditions may be spiritual, or of highly attenuated matter, is not my present notion, though that, too, may be some day accepted. Of course all

these data suffer, in one way, about as much distortion as they would in other ways, if they had been reported by astronomers or meteorologists. As to all the material in this chapter, I take the position that perhaps there were appearances in the sky, and perhaps they were revelations of, or mirages from, unknown regions and conditions of outer space, and spectacles of relatively nearby inhabited lands, and of space-travelers, but that all reports upon them were products of the assimilating of the unknown with figures and figments of the nearest familiar similarities. Another position of mine that will be found well-taken is that, no matter what my own interpretations or acceptances may be, they will compare favorably, so far as rationality is concerned, with orthodox explanations. There have been many assertions that "phantom soldiers" have been seen in the sky. For the orthodox explanation of the physicists, see Brewster's *Natural Magic,* p. 125: a review of the phenomenon of June 23, 1744; that, according to 27 witnesses, some of whom gave sworn testimony before a magistrate, whether that should be mentioned or not, troops of aerial soldiers had been seen, in Scotland, on and over a mountain, remaining visible two hours and then disappearing because of darkness. In Clarke's *Survey of the Lakes* (fol. 1789) is an account in the words of one of the witnesses. See *Notes and Queries,* 1-7-304. Brewster says that the scene must have been a mirage of British troops, who, in anticipation of the rebellion of 1745, were secretly maneuvering upon the other side of the mountain. With a talent for clear-seeing, for which we are notable, except when it comes to some of our own explanations, we almost instantly recognize that, to keep a secret from persons living upon one side of a mountain, it is a very sensible idea to go and maneuver upon the other side of the mountain; but then how to keep the secret, in a thickly populated country like Scotland, from persons living upon that other side of the mountain—however, there never has been an explanation that did not itself have to be explained.

Or the "phantom soldiers" that were seen at Ujest, Silesia, in 1785 —see Parish's *Hallucinations and Illusions,* p. 309. Parish finds that at the time of this spectacle, there were soldiers, of this earth, marching near Ujest; so he explains that the "phantom soldiers" were mirages of them. They were'marching in the funeral procession of General von Cosel. But some time later they were seen again, at Ujest—and the General had been dead and buried several days, and his funeral procession disbanded—and if a refraction can survive independently of its primary, so may a shadow, and

anybody may take a walk where he went a week before, and see some of his shadows still wandering around without him. The great neglect of these explainers is in not accounting for an astonishing preference for, or specialization in, marching soldiers, by mirages. But if often there be, in the sky, things or beings that move in parallel lines, and, if their betrayals be not mirages, but their shadows cast down upon the haze of this earth, or Brocken specters, such frequency, or seeming specialization, might be accounted for.

Sept. 27, 1846—a city in the sky of Liverpool (*Rept. B. A.*, 1847-39). The apparition is said to have been a mirage of the city of Edinburgh. This "identification" seems to have been the product of suggestion: at the time a panorama of Edinburgh was upon exhibition in Liverpool.

Summer of 1847—see Flammarion's *The Atmosphere,* p. 160— story told by M. Grellois: that he was traveling between Ghelma and Bône, when he saw, to the east of Bone, upon a gently sloping hill, "a vast and beautiful city, adorned with monuments, domes, and steeples." There was no resemblance to any city known to M. Grellois.

In the *Bull. Soc. Astro. de France,* 21-180, is an account of a spectacle that, according to 20 witnesses, was seen for two hours in the sky of Vienne dans le Dauphiné, May 3, 1848. A city—and an army, in the sky. One supposes that a Brewster would say that nearby was a terrestrial city, with troops maneuvering near it. But also vast lions were seen in the sky—and that is enough to discourage any Brewster. Four months later, according to the London *Times,* Sept. 13, 1848, a still more discouraging—or perhaps stimulating— spectacle was, or was not, seen in Scotland. Afternoon of Sept. 9, 1848—Quigley's Point, Lough Foyle, Scotland—the sky turned dark. It seemed to open. The opening looked reddish, and in the reddish area, appeared a regiment of soldiers. Then came appearances that looked like war vessels under full sail, then "a man and a woman and a swan and a peahen." The "opening" closed, and that was the last of this shocking or ridiculous mixture that nobody but myself would record as being worth thinking about.

"Phantom soldiers" that were seen in the sky, near the Banmouth, Dec. 30, 1850 (*Rept. B. A.,* 1852-30).

"Phantom soldiers" that were seen at Buderich, Jan. 22, 1854 (*Notes and Queries, 1-9-267)*.

"Phantom soldiers" that were seen by Lord Roberts (*Forty-One Years in India*, p. 219) at Mohan, Feb. 25, 1858. It is either that Lord Roberts saw indistinctly, and described in terms of the familiar to him, or that we are set back in our own motions. According to him, the figures wore Hindoo costumes.

Extra-geography—its vistas and openings and fields—and the Thoreaus that are upon this earth, but undeveloped, because they cannot find their ponds. A lonely thing and its pond, afloat in space—they crossed the moon. In *Cosmos*, n. s., 11-200, it is said that, night of July 7, 1857, two persons of Chambon had seen forms crossing the moon—something like a human being followed by a pond.

"Phantom soldiers" that were seen, about the year 1860, at Paderborn, Westphalia (Crowe, *Night-side of Nature*, p. 416).

19

WE attempt to co-ordinate various streaks of data, all of which signify to us that, external to this earth, and in relation with, or relatable to, this earth are lands and lives and a generality of conditions that make of the whole, supposed solar system one globule of circumstances like terrestrial circumstances. Our expressions are in physical terms, though in outer space there may be phenomena known as psychic phenomena, because of the solid substances and objects that have fallen from the sky to this earth, similar to, but sometimes not identified with, known objects and substances upon this earth. Opposing us is the more or less well-established conventional doctrine that has spun like a cocoon around mind upon this earth, shutting off research, and stifling even speculation, shelling away all data of relations and relatability with external existences, a doctrine that, in its various explanations and disregards and denials, is unified in one expression of Exclusionism.

An unknown vegetable substance falls from the sky. The datum is buried: it may sprout some day.

The earth quakes. A luminous object is seen in the sky. Substance falls from the unknown. But the event is catalogued with subterranean earthquakes.

All conventional explanations and all conventional disregards and denials have Exclusionism in common. The unity is so marked, all writings in the past are so definitely in agreement, that I now think of a general era that is, by Exclusionism, as distinctly characterized as ever was the Carboniferous Era.

A pregnant woman stands near Niagara Falls. There are sounds, and they are vast circumstances; but the cells of an unborn being respond, or vibrate, only as they do to disturbances in their own little environment. Horizons pour into a gulf, and thunder rolls upward: embryonic consciousness is no more than to slight perturbations of maternal indigestion. It is Exclusionism.

Stones fall from the sky. To the same part of this earth, they fall again. They fall again. They fall from some region that, relatively to this part of the earth's surface, is stationary. But to say this leads to the suspicion that it is this earth that is stationary. To think that is to beat against the walls of uterine dogmas—into a partly hairy and somewhat reptilian mass of social undevelopment comes exclusionist explanation suitable for such immaturity.

It does not matter which of our subjects we take up, our experience is unvarying: the standardized explanation will be Exclusionism. As to many appearances in the sky, the way of excluding foreign forces is to say that they are auroras, which are supposed to be mundane phenomena. School children are taught that auroras are electric manifestations encircling the poles of this earth. Respectful urchins are shown an ikon by which an electrified sphere does have the polar encirclements that it should have. But I have taken a disrespectful, or advanced, course through the *Monthly Weather Review*, and have read hundreds of times of auroras that were not such polar crownings: of auroras in Venezuela, Sandwich Islands, Cuba, India; of an aurora in Pennsylvania, for instance, and not a sign of it north of Pennsylvania. There are lights in the sky for which "auroral" is as good a name as any that can be thought of, but there are others for which some other names will have to be thought of. There have been lights like luminous surfs beating upon the coasts of this earth's atmosphere, and lights like vast reflections from distant fires; steady pencils of light and pulsating clouds and quick flashes and seeming objects with definite outlines, all in one poverty of nomenclature, for which science is, in some respects, not notable, called "auroral." Nobody knows what an aurora is. It does not matter. An unknown light in the sky is said to be auroral. This is standardization, and the essence of this standardization is Exclusionism.

I see one resolute, unified, unscrupulous exclusion from science of the indications of nearby lands in the sky. It may not be unscrupulousness: it may be hypnosis. I see that all seeming hypnotics, or somnambulists of the past, who have most plausibly so explained, or so denied, have prospered and have had renown. According to my impressions, if a Brewster, or a Swift, or a Newcomb ever had written that there may be nearby lands and living beings in the sky, he would not have prospered, and his renown would be still subject to delay. If an organism flourishes, it is said to be in harmony with environment, or with higher forces. I now conceive of

successful and flourishing Exclusionism as an organization that has been in harmony with higher forces. Suppose we accept that all general delusions function sociologically. Then, if Exclusionism be general delusion; if we shall accept that conceivably the isolation of this earth has been a necessary factor in the development of the whole geo-system, we see that exclusionistic science has faithfully, though falsely, functioned. It would be worldwide crime to spread world-wide too soon the idea that there are other existences nearby and that they have been seen and that sounds from them have been heard: the peoples of this earth must organize themselves before conceiving of, and trying to establish, foreign relations. A premature science of such subjects would be like a United States taking part in a Franco-Prussian War, when such foreign relations should be still far in the future of a nation that has still to concentrate upon its own internal development.

So in the development of all things—or that a stickleback may build a nest, and so may vaguely and not usefully and not explicably at all, in terms of Darwinian evolution, foreshadow a character of coming forms of life; but that a fish that should try to climb a tree and sing to its mate before even the pterodactyl had flapped around with wings daubed with clay would be an unnoticed little clown in cosmic drama. But I do conceive that when the Carboniferous Era is dominant, and when not a discordant thing will be permitted to flourish, though it may adumbrate, restrictions will not last forever, and that the rich and bountiful curse upon rooted things will some day be lifted.

20

PATCHED by a blue inundation that had never been seen before—this earth, early in the 6o's of the 19th century. Then faintly, from far away, this new appearance is seen to be enveloped with volumes of gray. Flashes like lightning, and faintest of rumbling sounds—then cloud-like envelopments roll away, and a blue formation shines in the sun. Meteorologists upon the moon take notes.

But year after year there are appearances, as seen from the moon, that are so characterized that they may not be meteorologic phenomena upon this earth: changing compositions wrought with elements of blue and of gray; it is like conflict between Synthesis and Dissolution: straight lines that fade into scrawls, but that reform into seeming moving symbols: circles and squares and triangles abound.

Having had no mean experience with interpretations as products of desires, given that upon the moon communication with this earth should be desired, it seems likely to me that the struggles of hosts of Americans, early in the 6o's of the 19th century, were thought by some lunarians to be maneuvers directed to them, or attempts to attract their attention. However, having had many impressions upon the resistance that new delusions encounter, so that, at least upon this earth, some benightments have had to wait centuries before finally imposing themselves generally, I'd think of considerable time elapsing before the coming of a general conviction upon the moon that, by means of living symbols, and the firing of explosives, terrestrians were trying to communicate.

Beacon-like lights that have been seen upon the moon. The lights have been desultory. The latest of which I have record was back in the year 1847. But now, if beginning in the early 6o's, though not coinciding with the beginning of unusual and tremendous manifestations upon this earth, we have data as if of greatly stimulated attempts to communicate from the moon—why one assimilates one's impressions of such great increase with this or with that, all according to what one's dominant thoughts may be, and calls the product a logical conclusion. Upon the night of May 15, 1864,

Herbert Ingall, of Camberwell, saw a little to the west of the lunar crater Picard, in the Mare Crisium, a remarkably bright spot (*Astro. Reg.*, 2-264).

Oct. 24, 1864—period of nearest approach by Mars—red lights upon opposite parts of Mars (*C. R.*, 85-538). Upon Oct. 16, Ingall had again seen the light west of Picard. Jan. 1, 1865—a small speck of light, in darkness, under the east foot of the lunar Alps, shining like a small star, watched half an hour by Charles Grover (*Astro. Reg.*, 3-255). Jan. 3, 1865—again the red lights of Mars (*C. R.*, 85-538). A thread of data appears, as an offshoot from a main streak, but it cannot sustain itself. Lights on the moon and lights on Mars, but I have nothing more that seems to signify both signals and responses between these two worlds.

April 10, 1865—west of Picard, according to Ingall—"a most minute point of light, glittering like a star" (*Astro. Reg.*, 3-189).

Sept. 5, 1865—a conspicuous bright spot west of Picard (*Astro. Reg.*, 3-252). It was seen again by Ingall. He saw it again upon the 7th, but upon the 8th it had gone, and there was a cloud-like effect where the light had been.

Nov. 24, 1865—a speck of light that was seen by the Rev. W. O. Williams, shining like a small star in the lunar crater Carlini (*Intel. Obs.*, 11-58).

June 10, 1866—the star-like light in Aristarchus; reported by Termpel (Denning, *Telescopic Work*, p. 121).

Astronomically and seleno-meteorologically, nothing that I know of has ever been done with these data. I think well of taking up the subject theologically. We are approaching accounts of a different kind of changes upon the moon. There will be data seeming so to indicate not only persistence but devotedness upon the moon that I incline to think not only of devotedness but of devotions. Upon the 16th of October, 1866, the astronomer Schmidt, of the land of Socrates, announced that the isolated object, in the eastern part of the Mare Serenitatis, known as Linne, had changed Linné stands out in a blank area like the Pyramid of Cheops in its desert. If changes did occur upon Linné, the conspicuous position seems to indicate selection. Before October, 1866, Linné was wellknown as a dark object. Something was whitening an object that had been black.

A hitherto unpublished episode in the history of theologies:

The new prophet who had appeared upon the moon—

Faint perceptions of moving formations, often almost rigorously geometric, upon one part of this earth, and perhaps faintest of signal-like

sounds that reached the moon—the new prophet—and that he preached the old lunar doctrine that there is no god but the Earth-god, but exhorted his hearers to forsake their altars upon which had burned unheeded lights, and to build a temple upon which might be recited a litany of lights and shades.

We are only now realizing how the Earth-god looks to the beings of the moon—who know that this earth is dominant; who see it frilled with the loops of the major planets; its Elizabethan ruff wrought by the complications of the asteroids; the busy little sun that brushes off the dark.

God of the moon, when mists make it expressionless—a vast, bland, silvery Buddha.

God of the moon, when seeing is clear—when the disguise is off—when, at night, from pointed white peaks drip the fluctuating red lights of a volcano, this earth is the appalling god of carnivorousness.

Sometimes the great roundish earth, with the heavens behind it broken by refraction, looks like something thrust into a shell from external existence—clouds of tornadoes as if in its grasp—and it looks like the fist of God, clutching rags of ultimate fire and confusion.

That a new prophet had appeared upon the moon, and had excited new hope of evoking response from the bland and shining Stupidity that has so often been mistaken for God, or from the Appalling that is so identified with Divinity—from the clutched and menacing fist that has so often been worshiped.

There is no intelligence except era-intelligence. Suppose the whole geo-system be a super-embryonic thing. Then, by the law of the embryo, its parts cannot organize until comes scheduled time. So there are local congeries of development of a chick in an egg, but these local centers cannot more than faintly sketch out relations with one another, until comes the time when they may definitely integrate. Suppose that far back in the 19th century there were attempts to communicate from the moon; but suppose that they were premature: then we suppose the fate of the protoplasmic threads that feel out too soon from one part of an egg to another. In October, 1866, Schmidt, of Athens, saw and reported in terms of the concepts of his era, and described in conventional selenographic language. See *Rept. B. A.*, 1867.

Upon Dec. 14, 16, 25, 27, 1866, Linné was seen as a white spot. But there was something that had the seeming more of a design, or of a pattern, an elaboration upon the mere turning to white of something that had been

black—a fine, black spot upon Linné; by Schmidt and Buckingham, in December, 1866 (*The Student*, 1-261). The most important consideration of all is reviewed by Schmidt in the *Rept. B. A., 1867-22*—that sunlight and changes of sunlight had nothing to do with the changing appearances of Linné. Jan. 14, 1867—the white covering, or, at least, seeming of covering, of Linné, had seemingly disappeared—Knott's impression of Linné as a dark spot, but "definition" was poor. January 16—Knott's very strong impression, which, however, he says may have been an illusion, of a small central dark spot upon Linné. Dawes' observation, of March 15, 1867—"an excessively minute black dot in the middle of Linné."

A geometric figure that was white-bordered and centered with black, formed and dissolved and formed again.

I have an impression of spectacles that were common in the United States, during the War: hosts of persons arranging themselves in living patterns: flags, crosses, and in one instance, in which thousands were engaged, in the representation of an enormous Liberty Bell. Astronomers have thought of trying to communicate with Mars or the moon by means of great geometric constructions placed conspicuously, but there is nothing so attractive to attention as change, and a formation that could appear and disappear would enchance the geometric with the dynamic. That the units of the changing compositions that covered Linné were the lunarians themselves—that Linné was terraced—hosts of the inhabitants of the moon standing upon the ridges of their Cheops of the Serene Sea, some of them dressed in white and standing in a border, arfd some of them dressed in black, centering upon the apex, or the dark material of the apex left clear for the contrast, all of them unified in a hope of conveying an impression of the geometric, as the product of design, and distinguishable from the topographic, to the shining god that makes the stars of their heavens marginal.

It is a period of great activity—or of conflicting ideas and purposes—upon the moon: new and experimental demonstrations, but also, of course, the persistence of the old. In the *Astronomical Register*, 5-114, Thomas G. Elger writes that upon the 9th of April, 1867, he was surprised to see, upon the dark part of the moon, a light like a star of the 7th magnitude, at 7:30 P.M. It became fainter, and looked almost extinguished at 9 o'clock. Mr. Elger had seen lights upon the moon before, but never before a light so clear—"too bright to be overlooked by the most careless observer." May 7,

1867—the beacon-like light of Aristarchus—observed by Tempel, of Marseilles, when Aristarchus was upon the dark part of the moon (*Astro. Reg.*, 5-220). Upon the night of June 10, 1867, Dawes saw three distinct, roundish, black spots near Sulpicius Gallus, which is near Linné; when looked for upon the 13th, they had disappeared (*The Student*, 1-261).

Aug. 6, 1867—

And this earth in the sky of the moon—smooth and bland and featureless earth—or one of the scenes that make it divine and appalling—jaws of this earth, as seem to be rims of more or less parallel mountain ranges, still shining in sunlight, but surrounded by darkness—

And, upon the moon, the assembling of the Chiaroscuroans, or the lunar communicationists who seek to be intelligible to this earth by means of lights and shades, patterned upon Linné by their own forms and costumes. The Great Pyramid of Linné, at night upon the moon—it stands out as a bold black triangularity pointing to this earth. It slowly suffuses white—the upward drift of white-clad forms, upon the slopes of the Pyramid. The jaws of this earth seem to munch, in variable light. There is no other response. Devotions are the food of the gods.

Upon Aug. 6, 1867, Buckingham saw upon Linné, which was in darkness, "a rising oval spot" (*Rept. B. A.*, 1867-7). In October, 1867, Linné was seen as a convex white spot (*Rept. B. A.*, 1867-8).

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Also it may be that the moon is not inhabited, and is not habitable. There are many astronomers who say that the moon has virtually no atmosphere, because when a star is passed over by the moon, the star is not refracted, according to them. See Clerke's *History of Astronomy*, p. 264—that, basing his calculations upon the fact that a star is never refracted out of place when occulted by the moon, Prof. Comstock, of Washburn Observatory, had determined that this earth's atmosphere is 5,000 times as dense as the moon's.

I did think that in this secondary survey of ours we had pretty well shaken off our old opposition, the astronomers: however, with something of the kindliness that one feels for renewed meeting with the familiar, here we are at home with the same old kind of demonstrations: the basing of laborious calculations upon something that is not so—

See index of *Monthly Notices, R. A. S.*—many instances of stars that have been refracted out of place when occulted by the moon. See the

Observatory, 24-210, 313, 315, 345, 414; *English Mechanic,* 23-197, 279; 26-229; 52—index, “atmosphere”; 81-60; 84-161; 85-108.

In the year 1821, Gruithuisen announced that he had discovered a city of the moon. He described its main thoroughfare and branching streets. In 1826, he announced that there had been considerable building, and that he had seen new streets. This formation, which is north of the crater Schroeter, has often been examined by disagreeing astronomers: for a sketch of it, in which a central line and radiating lines are shown, see the *English Mechanic,* 18-638. There is one especial object upon the moon that has been described and photographed and sketched so often that I shall not go into the subject. For many records of observations, see the *English Mechanic* and L’*Astronomie*. It is an object shaped like a sword, near the crater Birt. Anyone with an impression of the transept of a cathedral, may see the architectural here. Or it may be a mound similar to the mounds of North America that have so logically been attributed to the Mound Builders. In a letter, published in the *Astronomical Register,* 20-167, Mr. Birmingham calls attention to a formation that suggests the architectural upon the moon —”a group of three hills in a slightly acute-angled triangle, and connected by three lower embankments.” There is a geometric object, or marking, shaped like an “X,” in the crater Eratosthenes (*Sci. Amer. Sup.,* 59-24, 469); striking symbolic-looking thing or sign, or attempt by means of something obviously not topographic, to attract attention upon this earth, in the crater Plinius (*Eng. Mec.,* 35-34); reticulations, like those of a city’s squares, in Plato (*Eng. Mec.,* 64-253); and there is a structural-looking composition of angular lines in Gassendi (*Eng. Mec.,* 101-466). Upon the floor of Littrow are six or seven spots arranged in the form of the Greek letter *Gamma (Eng. Mec.,* 101-47). This arrangement may be of recent origin, having been discovered Jan. 31, 1915. The Greek letter makes difficulty only for those who do not want to think easily upon this subject. For a representation of something that looked like a curved wall upon the moon, see L’*Astronomie,* 1888-110. As to appearances like viaducts, see *L’Astronomie,* 1885-213. The lunar craters are not in all instances the simple cirques that they are commonly supposed to be. I have many different impressions of some of them: I remember one sketch that looked like an owl with a napkin tucked under his beak. However, it may be that the general style of architecture upon the moon is Byzantine, very likely, or not so likely, domed with glass, giving the dome-effect that has so often been commented upon.

So then the little nearby moon—and it is populated by Liliputians. However, our experience with agreeing ideas having been what it has been, we suspect that the lunarians are giants. Having reasonably determined that the moon is one hundred miles in diameter, we suppose it is considerably more or less.

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A group of astronomers had been observing extraordinary lights in the lunar crater Plato. The lights had definite arrangement. They were so individualized that Birt and Elger, and the other selenographers, who had combined to study them, had charted and numbered them. They were fixed in position, but rose and fell in intensity.

It does seem to me that we have data of one school of communicationists after another coming into control of efforts upon the moon. At first our data related to single lights. They were extraordinary, and they seem to me to have been signals, but there seemed to be nothing of the organization that now does seem to be creeping into the fragmentary material that is the best that we can find. The grouped lights in Plato were so distinctive, so clear and even brilliant, that if such lights had ever shone before, it seems that they must have been seen by the Schroeters, Gruithuisens, Beers and Madlers, who had studied and charted the features of the moon. For several of Gledhill's observations, from which I derive my impressions of these lights, see *Rept. B. A.,* 1871-80—"I can only liken them to the small discs of stars, seen in the transit-instrument"; "just like small stars in the transit instrument, upon a windy night!"

In August and September, 1869, occurred a notable illumination of the spots in Group I. It was accompanied by a single light upon a distant spot.

February and March, 1870—illumination of another group.

April 17, 1870—another illumination in Plato, but back to the first group.

As to his observations of May 10-12, 1870, Birt gives his opinion that the lights of Plato were not effects of sunlight.

Upon the 13th of May, 1870, there was an "extraordinary display," according to Birt: 27 lights were seen by Pratt, and 28 by Elger, but only 4 by Gledhill, in Brighton. Atmospheric conditions may have made this difference, or the lights may have run up or down a scale from 4 to 28. As to independence of sunlight, Pratt says (*Rept. B. A.,* 1871-88) as to this display, that only the fixed, charted points so shone, and that other parts of the crater were not illuminated, as they would have been to an incidence

common throughout. In Pratt's opinion, and, I think, in the opinion of the other observers, these lights were volcanic. It seems to me that this opinion arose from a feeling that there should be something of an opinion: the idea that the lights might have been signals was not expressed by any of these astronomers that I know of. I note that, though many observers were, at this time, concentrating upon this one crater, there are no records find-able by me of such disturbance of detail as might be supposed to accompany volcanic action. The clear little lights seem to me to have been anything but volcanic.

The play of these lights of Plato—their modulations and their combinations—like luminous music—or a composition of signals in a code that even in this late day may be deciphered. It was like orchestration—and that something like a baton gave direction to Light 22, upon Aug. 12, 1870, to shine a leading part— "remarkable increase of brightness." No. 22 subsided, and the leading part shone out in No. 14. It, too, subsided, and No. 16 brightened.

Perhaps there were definite messages in a Morse-like code. There is a chance for the electricity in somebody's imagination to start crackling. Up to April, 1871, the selenographers had recorded 1,600 observations upon the fluctuations of the lights of Plato, and had drawn 37 graphs of individual lights. All graphs and other records were deposited by W. R. Birt in the Library of the Royal Astronomical Society, where presumably they are to this day. A Champollion may some day decipher hieroglyphics that may have been flashed from one world to another.

21

OUR data indicate that the planets are circulating adjacencies. Almost do we now conceive of a difficulty of the future as being not how to reach the planets, but how to dodge them. Especially do we warn aviators away from that rhinoceros of the skies, Mercury. I have a note somewhere upon one of the wickedest-looking horns in existence, sticking out far from Mercury. I think it was Mr. Whitmell who made this observation. I'd like to hear Andrew Barclay's opinion upon that. I'd like to hear Capt. Noble's.

If sometimes does the planet Mars almost graze this earth, as is not told by the great telescopes, which are only millionaires' memorials, or, at least, which reveal but little more than did the little spy glasses used by Burnham and Williams and Beer and Mädler— but if periodically the planet Mars comes very close to this earth, and, if Mars, an island with perhaps no more surface-area than has England, but likely enough inhabited, like England—

June 19, 1875—opposition of Mars.

Flashes that were seen in the sky upon the 25th of June, 1875, by Charles Gape, of Scole, Norfolk (*Eng. Mec.*, 21-488). The Editor of *Symons' Met. Mag.* (see vol. 10-116) was interested, and sent Mr. Gape some questions, receiving answers that nothing had appeared in the local newspapers upon the subject, and that nothing could be learned of a display of fireworks, at the time. To Mr. Gape the appearances seemed to be meteoric.

The year 1877—climacteric opposition of Mars.

There were some discoveries.

We have at times wondered how astronomers spend their nights. Of course, according to many of his writings upon the subject, Richard Proctor had an excellent knowledge of whist. But in the year 1877, two astronomers looked up at the sky, and one of them discovered the moons of Mars, and the other called attention to lines on Mars—and, if for centuries, the moons of Mars could so remain unknown to all inhabitants of this earth except, as it were, Dean Swift—why, it is no wonder that we so respectfully heed some of the Dean's other intuitions, and think that there may be Liliputians,

or Brobdingnagians, and other forms not conventionally supposed to be. As to our own fields of data, I have a striking number of notes upon signal-like appearances upon the moon, in the year 1877, but have notes upon only one occurrence that, in our interests, may relate to Mars. The occurrence is like that of July 31, 1813, and June 19, 1875.

Sept. 5, 1877—opposition of Mars.

Sept. 7, 1877—lights appeared in the sky of Bloomington, Indiana. They were supposed to be meteoric. They appeared and disappeared, at intervals of three or four seconds; darkness for several minutes; then a final flash of light. See *Sci. Amer.*, 37-193.

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That all luminous objects that are seen in the sky when the planet Venus is nearest may not be Venus; may not be fire-balloons :

In the *Dundee Advertiser,* Dec. 22, 1882, it is said that, between 10 and 11 A.M., December 21, at Broughty Ferry, Scotland, a correspondent had seen an unknown luminous body near and a little above the sun. In the *Advertiser,* December 25, is published a letter from someone who says that this object had been seen at Dundee, also; that quite certainly it was the planet Venus and "no other." In *Knowledge,* 2-489, this story is told by a writer who says that undoubtedly the object was Venus. But, in *Knowledge,* 3-13, the astronomer J. E. Gore writes that the object could not have been Venus, which upon this date was 1 h. 33 m., R. A., west of the sun. The observation is reviewed in *L'Astronomie,* 1883-109. Here it is said that the position of Mercury accorded better. Reasonably this object could not have been Mercury: several objections are comprehended in the statement that superior conjunction of Mercury had occurred upon December 16.

Upon Feb. 3, 1884, M. Staevert, of the Brussels Observatory, saw, upon the disc of Venus, an extremely brilliant point (*Ciel et Terre,* 5-127). Nine days later, Niesten saw just such a point of light as this, but at a distance from the planet. If no one had ever heard that such things cannot be, one might think that these two observations were upon something that had been seen leaving Venus and had then been seen farther along. Upon the 3rd of July, 1884, a luminous object was seen moving slowly in the sky of Norwood, N. Y. It had features that suggest the structural: a globe the size of the moon, surrounded by a ring; two dark lines crossing the nucleus (*Science Monthly,* 2-136). Upon the 26th of July, a luminous globe, size of the moon, was seen at Cologne; it seemed to be moving upward from this

earth, then was stationary “some minutes,” and then continued upward until it disappeared (*Nature,* 30-360). And in the *English Mechanic,* 40-130, it is not said that a luminous vessel that had sailed out from Venus, in February, visiting this earth, where it was seen in several places, was seen upon its return to the planet, but it is said that an observer in Rochester, N. Y., had, upon August 17, seen a brilliant point upon Venus.

22

EXPLOSIONS over the towns of Barisal, Bengal, if they were aerial explosions, were continuing. As to some of these detonations that were heard in May, 1874, a writer in *Nature*, 53-197, says that they did seem to come from overhead. For a report upon the Barisal Guns, heard between April 28, 1888, and March 1, 1889, see *Proc. Asiatic Soc. of Bengal*, 1889-199.

Phenomena at Comrie were continuing. The latest date in Roper's *List of Earthquakes* is April 8, 1886, but this list goes on only a few years later. See *Knowledge*, n. s., 6-145—shock and a rumbling sound at Comrie, July 12, 1894—a repetition upon the corresponding date, the next year. In the *English Mechanic*, 74-155, David Packer says that, upon Sept. 17, 1901, ribbon-like flashes of lightning, which were not ordinary lightning, were seen in the sky (I think of Birmingham) one hour before a shock in Scotland. According to other accounts, this shock was in Comrie and surrounding regions (London *Times*, Sept. 19, 1901).

Smithson. Miscell. Cols., 37-Appendix, p. 71:

According to L. Tennyson, Quartermaster's Clerk, at Fort Klamath, Oregon, at daylight, Jan. 8, 1867, the garrison was startled from sleep by what he supposed to be an earthquake and a sound like thunder. Then came darkness, and the sky was covered with black smoke or clouds. Then ashes, of a brownish color, fell—"as fast as I ever saw it snow." Half an hour later there was another shock, described as "frightful." No one was injured, but the sutler's store was thrown a distance of ninety feet, and the vibrations lasted several minutes. Mr. Tennyson thought that somewhere near Fort Klamath, a volcano had broken loose, because, in the direction of the Klamath Marsh, a dark column of smoke was seen. I can find record of no such volcanic eruption. In a list of quakes, in Oregon, from 1846, to 1916, published in the *Bull. Seis. Soc. Amer.*, September, 1919, not one is attributed to volcanic eruptions. Mr. W. D. Smith, compiler of the list, says, as to the occurrence at Fort Klamath—"If there was an eruption, where was it?" He asks whether possibly it could have been in Lassen Peak. But

Lassen Peak is in California, and the explosion upon Jan. 8, 1867, was so close to Fort Klamath that almost immediately ashes fell from the sky.

The following is of the type of phenomena that might be considered evidence of signaling from some unknown world nearby:

La Nature, 17-126—that, upon June 17, 1881, sounds like cannonading were heard at Gabes, Tunis, and that quaking of the earth was felt, at intervals of 32 seconds, lasting about 6 minutes.

July 30, 1883—a somewhat startling experience—steamship *Resolute* alone in the Arctic Ocean—six reports like gunfire—*Nature*, 53-295-

In *Nature*, 30-19, a correspondent writes that, upon the 3rd of January, 1869, a policeman in Harlton, Cambridgeshire, heard six or seven reports, as if of heavy guns far away. There is no findable record of an earthquake in England upon this date. In the London *Times*, Jan. 12, 15, 16, 1869, several correspondents write that upon the 9th of January a loud report had been heard and a shock felt at places near Colchester, Essex, about 30 miles from Harlton. One of the correspondents writes that he had heard the sound but had felt no shock. In the London *Standard*, January 12, the Rev. J. F. Bateman, of South Lopham, Norfolk, writes as to the occurrence upon the 9th—"An extraordinary vibration (described variously by my parishioners as being 'like a gunpowder explosion,' 'a big thunder clap,' and 'a little earthquake') was noticed here this morning about 11.20." In the *Morning Post*, January 14, it is said that at places about twenty miles from Colchester it was thought that an explosion had occurred, upon the 9th, but, inasmuch as no explosion had been heard of, the disturbance was attributed to an earthquake. Night of January 13—an explosion in the sky, at Brighton (*Rept. B. A.*, 1869-307). In the *Standard*, January 22, a correspondent writes from Swaffham, Norfolk, that, about 8 P.M., January 15, something of an unknown nature had frightened flocks of sheep, which had burst from their bounds in various places. All these occurrences were in adjoining counties in southeastern England. Something was seen in the sky upon the 13th, and, according to the *Chudleigh Weekly Express*, Jan. 13, 1869, something was seen in the sky, night of the 10th, at Weston-super-Mare, near Bristol, in southwestern England. It was seen between 9 and 10 o'clock, and is said to have been an extraordinary meteor. Five hours later were felt three shocks said to have been earthquakes.

Upon the night of March 17, 1871, there was a series of events in France, and a series in England. A "meteor" was seen at Tours, at 8 P.M.—at 10:45, a

“meteor” that left a luminous cloud over Saintes (Charante-Inferieure)—another at Paris, 11:15, leaving a mark in the sky, of fifteen minutes’ duration—another at Tours, at 11:45 P.M. See *Les Mondes*, 24-190, and *Comptes Rendus*, 72-789. There were “earthquakes” this night affecting virtually all England north of the Mersey and the Trent, and also southern parts of Scotland. As has often been the case, the phenomena were thought to have been explosions and were then said to have been earthquakes when no terrestrial explosions could be heard of (*Symons’ Met. Mag.*, 6-39). There were six shocks near Manchester, between 6 and 7 P.M., and others about 11 P.M.; and in Lancashire about 11 P.M., and continuing in places as far apart as Liverpool and Newcastle, until 11:30 o’clock. The shocks felt about 11 o’clock correspond, in time, with the luminous phenomena in the sky of France, but our way of expressing that these so-called earthquakes in England may have been concussions from repeating explosions in the sky, is to record that, according to correspondence in the London *Times*, there were, upon the 20th, aerial phenomena in the region of Lancashire that had been affected upon the 17th—”sounds that seemed to come from a number of guns at a distance” and “pale flashes of lightning in the sky.”

Whether these series of phenomena be relatable to Mars or Martians or not, we note that in 1871 opposition of Mars was upon March 19; and, in 1869, upon February 13; and in 1867 two days after the explosions at Fort Klamath. In our records in this book, similar coincidences can be found up to the year 1879. I have other such records not here published, and others that will be here investigated.

There is a triangular region in England, three points of which appear so often in our data that the region should be specially known to us, and I know it myself as the London Triangle. It is pointed in the north by Worcester and Hereford, in the south by Reading, Berkshire, and in the east by Colchester, Essex. The line between Colchester and Reading runs through London.

Upon Feb. 18, 1884, at West Mersea, near Colchester, a loud report was heard (*Nature*, 53-4). Upon the 22nd of April, 1884, centering around Colchester, occurred the severest earthquake in England in the 19th century. For several columns of description, see the London *Times*, April 23. There is a long list of towns in which there was great damage: in 24 parishes near Colchester, 1,250 buildings were damaged. One of the places that suffered most was West Mersea (*Daily Chronicle*, April 28).

There was something in the sky. According to G. P. Yeats (*Observations upon the Earthquake of Dec. 17, 1896*, p. 6) there was a red appearance in the sky over Colchester, at the time of the shock of April 22, 1884.

The next day, according to a writer in *Knowledge*, 5-336, a stone fell from the sky, breaking glass in his greenhouse, in Essex. It was a quartz stone, and unlike anything usually known as meteoritic.

The indications, according to my reading of the data, and my impressions of such repeating occurrences as those at Fort Klamath, are that perhaps an explosion occurred in the sky, near Colchester, upon Feb. 18, 1884; that a great explosion did occur over Colchester, upon the 22nd of April, and that a great volume of debris spread over England, in a northwesterly direction, passing over Worcestershire and Shropshire, and continuing on toward Liverpool, nucleating moisture and falling in blackest of rain. From the Stonyhurst Observatory, near Liverpool, was reported, occurring at 11 A.M., April 26, "the most extraordinary darkness remembered"; forty minutes later fell rain "as black as ink," and then black snow and black hail (*Nature*, 30-6). Black hail fell at Chaigley, several miles from Liverpool (*Stonyhurst Magazine*, 1-267). Five hours later, black substance fell at Crowle, near Worcester (*Nature*, 30-32). Upon the 28th, at Church Stretton and Much Wenlock, Shropshire, fell torrents of liquid like ink and water in equal proportions (*The Field*, May 3, 1884). In the *Jour. Roy. Met. Soc.*, 11-7, it is said that, upon the 28th, half a mile from Lilleshall, Shropshire, an unknown pink substance was brought down by a storm. Upon the 3rd of May, black substance fell again at Crowle (*Nature*,

30-32).

In *Nature*, 30-216, a correspondent writes that, upon June 22, 1884, at Fletching, Sussex, southwest of Colchester, there was intense darkness, and that rain then brought down flakes of soot in such abundance that it seemed to be "snowing black." This was several months after the shock at Colchester, but my datum for thinking that another explosion, or disturbance of some kind, had occurred in the same local sky, is that, as reported by the inmates of one house, a slight shock was felt, upon the 24th of June, at Colchester, showing that the phenomena were continuing. See Roper's *List of Earthquakes.*

Was not the loud report heard upon February 18 probably an explosion in the sky, inasmuch as the sound was great and the quake little? Were not succeeding phenomena sounds and concussions and the fall of debris from

explosions in the sky, acceptably upon April 22, and perhaps continuing until the 24th of June? Then what are the circumstances by which one small part of this earth's surface could continue in relation with something somewhere else in space?

Comrie, Irkutsk, and Birmingham.

23

UPON the night of the 13th of July, 1875, at midnight, two officers of H. M. S. *Coronation*, in the Gulf of Siam, saw a luminous projection from the moon's upper limb (*Nature*, 12-495). Upon the 14th it was gone, but a smaller projection was seen from another part of the moon's limb. This was in the period of the opposition of Mars.

Upon the night of Feb. 20, 1877, M. Trouvelot, of the Observatory of Meudon, saw, in the lunar crater Eudoxus, which, like almost all other centers of seeming signaling, is in the north-western quadrant of the moon, a fine line of light (L'*Astronomie*, 1885-212). It was like a luminous cable drawn across the crater.

March 21, 1877—a brilliant illumination, and not by the light of the sun, according to C. Barrett, in the lunar crater Proclus (*Eng. Mec.*, 25-89).

May 15 and 29, 1877—the bright spot west of Picard (*Eng. Mec*, 25-335).

The changes upon Linné were first seen by Schmidt, in 1866, near the time of opposition of Mars. In May, 1877, Dr. Klein announced that a new object had appeared upon the moon. It was close to the center of the visible disc of the moon, and was in a region that had been most carefully studied by the selenographers. In the *Observatory*, 2-238, is Neison's report from his own memoranda. In the years 1874 and 1875, he had studied this part of the moon, but had not seen this newly reported object in the crater Hyginus, or the object, Hyginus N, according to the selenographers' terminology. In the *Astronomical Register*, 17-204, Neison lists, with details, 20 minute examinations of this region, from July, 1870, to August, 1875, in which this conspicuous object was not recorded.

June 14, 1877—a light on the dark part of the moon, resembling a reflection from a moving mirror; reported by Prof. Henry Harrison (*Sidereal Messenger*, 3-150). June 15—the bright spot west of Picard, according to Birt (*Jour. B. A. A.*, 19-376). Upon the 16th, Prof. Harrison thought that again he saw the moving light of the 14th, but shining faintly. In the *English Mechanic*, 25-432, Frank Dennett writes, as to an

observation of June 17, 1877—"I fancied I could detect a minute point of light shining out of the darkness that filled Bessel."

These are data of extraordinary activity upon the moon preceding the climacteric opposition of Mars, early in September, 1877.

Now we have an account of an occurrence during an eclipse of the moon:

On the night of the eclipse (Aug. 27, 1877) a ball of fire, of the apparent size of the moon, was seen, at ten minutes to eleven, dropping apparently from cloud to cloud, and the light flashing across the road (*Astro. Reg.,* 1878-75).

Astro. Reg., 17-251:

Nov. 13, 1877—Hyginus N standing out with such prominence as to be seen at the first glance;

Nov. 14, 1877—not a trace of Hyginus N, though seeing was excellent:

Oct. 3, 1878—the most conspicuous of all appearances of Hyginus N;

Oct. 4, 1878—not a trace of Hyginus N.

Upon the night of Nov. 1, 1879, again in the period of opposition of Mars (opposition November 12) again the bright spot west of Picard (*Jour B. A. A.,* 19-376). But I have several records of observations upon this appearance not in times of opposition of Mars. Whether there be any relation with anything else or not, at five o'clock, morning of Nov. 1, 1879, a "vivid flash" was seen and a shock was felt at West Cumberland (*Nature,* 21-19).

In the autumn of the year 1883, began extraordinary atmospheric effects in the sky of this earth. For Prof. John Haywood's description of similar appearances upon the moon, Nov. 4, 1883, and March 29, 1884, see the *Sidereal Messenger,* 3-121. They were misty light-effects upon the dark part of the moon, not like "earth-shine." Our expression is that so close is the moon to this earth that it, too, may be affected by phenomena in the atmosphere of this earth.

Something like another luminous cable, or like a shining wall, that was seen in Aristarchus, by Trouvelot, Jan. 23, 1880 (L'*Astro.,* 1885-215); a speck of light in Marius, Jan. 13, 1881, by A. S. Williams (*Eng. Mec.,* 32-494); unexplained light in Eudoxus, by Trouvelot, May 4,1881 (*L'Astro.,* 1885-213); an illumination in Kepler, by Morales, Feb. 5, 1884 (*L'Astro.,* 9-149).

In *Knowledge,* 7-224, William Gray writes that, upon Feb. 19, 1885, he saw, in Hercules, a dull, deep, reddish appearance. In L'*Astronomie,* 1885-

227, Lorenzo Kropp, an astronomer of Paysandu, Uruguay, writes that, upon Feb. 21, 1885, he had seen, in Cassini, a formation not far from Hercules, both of them in the northwestern quadrant of the moon, a reddish smoke or mist. He had heard that several other persons had seen, not a misty appearance, but a star-like light here, and upon the 22nd he had seen a definite light, himself, shining like the planet Saturn.

May 11, 1885—two lights upon the moon (*L'Astro.*, 9-73).

May 11, 1886—two lights upon the moon (*L'Astro.*, 6-312).

24

THAT through lenses rimmed with horizons, inhabitants of this earth have seen revelations of other worlds—that atmospheric strata of different densities are lenses—but that the faults of the wide glasses in the observatories are so intensified in atmospheric revelations that all our data are distortions. Our acceptance is that every mirage has a primary; that in human mind all poetry is based upon observation, and that imagery in the sky is similarly uncreative. If a mirage cannot be traced to the known upon this earth, one supposes that it is either a derivation from the unknown upon this earth, or from the unknown somewhere else. We shall have data of a series of mirages in Sweden, or upon the shores of the Baltic, from October, 1881, to December, 1888. I take most of the data from *Nature, Knowledge, Cosmos,* and L'*Astronomie,* published in this period. I have no data of such appearances in this region either before or after this period: the suggestion in my own mind is that they were not mirages from terrestrial primaries, or they would not be so confined to one period, but were shadows or mirages from something that was in temporary suspension over the Baltic and Sweden, all details distorted and reported in terms of familiar terrestrial appearances.

Oct. 10, 1881—that at Rugenwalde, Pomerania, the mirage of a village had been seen: snow-covered roofs from which hung icicles; human forms distinctly visible. It was believed that the mirage was a representation of the town of Nexo, on the island of Bornholm. Rugenwalde is on the Baltic, and Nexo is about 100 miles northwest, in the Baltic.

The first definite account of the mirages of Sweden, findable by me, is published in *Nature,* June 29, 1882, where it is said that preceding instances had attracted attention—that, in May, 1882, over Lake Orsa, Sweden, representations of steamships had been seen, and then "islands covered with vegetation." Night of May 19, 1883—beams of light at Lake Ludyika, Sweden—they looked like a representation of a lake in moonshine, with shores covered with trees, showing faint outlines of farms (*Monthly Weather Review,* May, 1883). May 28, 1883—at Finsbo, Sweden—

changing scenes, at short intervals: mountains, lakes, and farms. Oct. 16, 1884— Lindsberg—a large town, with four-storied houses, a castle and a lake. May 22, 1885—Gothland—a town surrounded by high mountains, a large vessel in front of the town. June 15, 1885—near Oxelosund—two wooded islands, a construction upon one of them, and two warships. It is said that at the time two Swedish warships were at sea, but were at considerable distance north of Oxelo-sund. Sept. 12, 1885—Valla—a representation that is said to have been a "remarkable mirage" but that is described as if the appearances were cloud-forms—several monitors, one changing into a spouting whale, and the other into a crocodile—then forests —dancers—a wooded island with buildings and a park. Sept. 29, 1885—again at Valla—between 8 and 9 o'clock, P.M.; a lurid glare upon the northwestern horizon; a cloud bank—animals, groups of dancers, a forest, and then a park with paths. July 15, 1888—Hudik-wall—a tempestuous sea, and a vessel upon it; a small boat leaving the vessel. Upon Oct. 8, 1888, at Merexull, on the Baltic, but in Russia, was seen a mirage of a city that lasted an hour. It is said that some buildings were recognized, and that the representation was identified with St. Petersburg, which is about 200 miles from the Baltic.

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That a large, substantial mass, presumably of land, can be in at least temporary suspension over a point upon this earth's surface, and not fall, and be, in ordinary circumstances, invisible—

In *L'Astronomie*, 1887-426, MM. Codde and Payan, both of them astronomers, well-known for their conventional observations and writings, publish accounts of an unknown body that appeared upon the sun's limb, for twenty or thirty seconds, after the eclipse of Aug. 19, 1887. They saw a round body, apparent diameter about one tenth of the apparent diameter of the sun, according to the sketch that is published. In *L'Astronomie*, these two observers write separately, and, in the city of Marseilles, their observations were made at a distance apart. But the unknown body was seen by both upon the same part of the sun's limb. So it is supposed that it could not have been a balloon, nor a circular cloud, nor anything else very near this earth. But many astronomers in other parts of Europe were watching this eclipse, and it seems acceptable that others, besides two in Marseilles, continued to look, immediately after the eclipse; but from nowhere else came a report upon this object, so that all indications are that

it was far from the sun and near Marseilles, but farther than clouds or balloons in this local sky. I can draw no diagram that can satisfy all these circumstances, except by supposing the sun to be only a few thousand miles away.

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If little black stones fall four times, in eleven years, to one part of this earth's surface, and fall nowhere else, we are, in conceiving of a fixed origin somewhere above a stationary earth, at least conceiving in terms of data, and, whether we are fanatics or not, we are not of the type of other upholders of stationariness of this earth, who care more for Moses than they do for data. I'd not like to have it thought that we are not great admirers of Moses, sometimes.

The rock that hung in the sky of Servia—

Upon Oct. 13, 1872, a stone fell from the sky, to this earth, near the town of Soko-Banja, Servia. If it were not a peculiar stone, there is no force to this datum. It is said that it was unknown stone. A name was invented for it. The stone was called *banjite,* after the town near which it fell.

Seventeen years later (Dec. 1, 1889) another rock of *banjite* fell in Servia, near Jelica.

For Meunier's account of these stones, see L'*Astronomie,* 1890-272, and *Comptes Rendus,* 92-331. Also, see *La Nature,* 1881-1-192. According to Meunier these stones did fall from the sky; indigenous to this earth there are no such stones; nowhere else have such stones fallen from the sky; they are identical in material; they fell seventeen years apart.

. . . . . .

At times when we think favorably of this work of ours, we see in it a pointing-out of an evil of modern specialization. A seismologist studies earthquakes, and an astronomer studies meteors; neither studies both earthquakes and meteors, and consequently each, ignorant of the data collected by the other, sees no relation between the two phenomena. The treatment of the event in Servia, Dec. 1, 1889, is an instance of conventional scientific attempts to understand something by separately, or specially, focusing upon different aspects, and not combining into an inclusive concept. Meunier writes only upon the stones that fell from the sky, and does not mention an earthquake at the time. Milne, in his *Catalogue of Destructive Earthquakes,* lists the occurrence as an

earthquake, and does not mention stones that fell from the sky. All combinations greatly affect the character of components: in our combination of the two aspects, we see that the phenomenon was not an earthquake, as earthquakes are commonly understood, though it may have been meteoric; but was not meteoric, in ordinary terms of meteors, because of the unlikelihood that meteors, identical in material, should, seventeen years apart, fall upon the same part of this earth's surface, and nowhere else.

This occurrence was of course an explosion in the sky, and its vibrations were communicated to the earth below, with all the effects'of any other kind of earthquakes. Back in our earliest confusion of the data of a century's first quarter, we had awareness of this combination and its conventional misinterpretation: that many concussions that have been communicated from explosions in the sky have been catalogued in lists of subterranean earthquakes. We are farther along now, in our data of the 19th century, and now we come across awareness, in other minds, of this distinguishment. At 8:20 A.M., Nov. 20, 1887, was heard and felt something that was reported from many places in the region that is known to us as the London Triangle, as an earthquake, though in some towns it was thought that a great explosion, perhaps in London, had occurred. It was reported from Reading, and from four towns near Reading, and Reading is said to be one of the places where the concussion was greatest. There were several accounts of slight alarm among sheep, which are sensitive to meteors and earthquakes. But, in *Symons' Met. Mag.*, Mr. H. G. Fordham wrote that the occurrence was not an earthquake; that a meteor had exploded. He had very little to base this opinion upon: out of scores of descriptions, he had record of only two assertions that something had been seen in the sky. Nevertheless, because the sound was so much greater than the concussion, Mr. Fordham came to his conclusion.

In *Symons' Met. Mag.*, 23-154, Dr. R. H. Wake writes that, upon the evening of Nov. 3, 1888, in a region about four miles wide and ten or fifteen miles long, in the Thames Valley (near Reading) flocks of sheep had rushed from their folds in a common alarm. About a year later, in the Chiltern Hills, which extend in a northeasterly direction from the Thames Valley, near Reading, there was another such occurrence. In the London *Standard*, Nov. 7, 1889, the Rev. J. Ross Barker, of Chesham, a town about 25 miles northeast of Reading, writes that, upon Oct. 25, 1889, many flocks

of sheep, in a region of 30 square miles, had, by common impulse, broken from their folds. Mr. Barker asks whether anyone knew of a meteor or of an earthquake at the time. In vol. 24, *Symons' Met. Mag.*, Mr. Symons accepts that all three of these occurrences were effects of meteoric explosions in the sky. The phenomena are insignificant relatively to some that we have considered: the significance is in this definite recognition in orthodoxy, itself, that some supposed earthquakes, or effects of supposed earthquakes, are reactions to explosions in the sky.

25

EXPLODING monasteries that shoot out clouds of monks into cyclonic formations with stormy nuns similarly dispossessed or collapsing monasteries—sometimes slowly crumbling confines of the cloistered—by which we typify all things: that all developments pass through a process of walling-away within shells that will break. Once upon a time there was a shell around the United States. The shell broke. Some other things were smashed.

The doctrines of great distances among heavenly bodies, and of a moving earth are the strongest elements of Exclusionism: the mere idea of separations by millions of miles discourages thoughts of communication with other worlds; and only to think that this earth shoots through space at a velocity of 19 miles a second puts an end to speculation upon how to leave it and how to return. But, if these two conventions be features of a walling-away like that of a chick within its shell, or that of the United States within its boundaries, and if some day all such confinements of the embryonic break, our own prophecy, in the vague terms of all successful prophecies, is that a matured view of astronomic phenomena will be from a litter of broken demonstrations.

Our expression now is upon the function of Isolation in Development. Specially it is not ours, because I think we learned it from the biologists, but we are applying it generally. If the general expression be accepted, we conceive that functionally have the astronomers taught that planets are millions of miles away, and that this earth moves at such terrific velocity that it is encysted with speed. Whether isolations function or not, that exclusions that break down are typical of all developments is signified by data upon all growing things, beginning with the aristocratic seeds, which, however, liberalize to intercourse with mean materials or die. All animal-organisms are at first walled away. In human circumstances conditions are the same. The development of every science has been a series of temporary exclusions, and the story of every industry tells of inventions that were resisted, but that were finally admitted. At the beginning of the nineteenth

century, Hegel published his demonstration that there could be only seven planets: too late to recall the work, he learned that Ceres had been discovered. It is our expression that the mental state of Hegel partook of a general spirit of his time, and that it was necessary, or that it functioned, because early astronomers could scarcely have systematized their doctrine had they been bewildered by seven or eight hundred planetary bodies; and that, besides the functions of the astronomers, according to our expressions, there was also their usefulness in breaking down the walls of the older, and outlived, orthodoxy. We conceive that it is well that a great deal of experience should be withheld from children, and that, any way, in their early years, they are sexually isolated, for instance, and our idea is that our data have been held back by no outspoken conspiracy, but by an inhibition similar to that by which a great deal of biology, for instance, is not taught to children. But, if we think of something of this kind, equally acceptable is it that even in the face of orthodox principles, these data have been preserved in orthodox publications, and that, in the face of supposed principles of Darwinism, as applied generally they have survived, though not in harmony with their environment.

Tons of paper have been consumed by calculations upon the remoteness of stars and planets. But I can find nothing that has been calculated, or said, that is sounder than Mr. Shaw's determination that the moon is 37 miles away. It is that the Vogels and the Struves and the Newcombs have been functionally hypnotized and have usefully spread the embryonic delusion that there is a vast, untraversible expanse of space around this earth, or that they have had some basis that it has been my misfortune to be unable to find, or that there is no pleasant and unaccusatory way of explaining them.

April 10, 1874—a luminous object that exploded in the sky of Kuttenberg, Bohemia. It is said that the glare was like sunlight, and that the "terrifying flash" was followed by a detonation that rumbled about a minute. April 9, 1876—an explosion that is said to have been violent, over the town of Rosenau, Hungary. See R*ept. B. A.*, 1877-147.

These two objects which appeared in virtually the same local sky of this earth—points of explosion 250 miles apart—came from virtually the same point in the sky: constellation of Cassiopeia; different by two degrees in right ascension, and with no difference in declination. About the same time in the evening: one at 8:09 P.M., and the other at 8:20 P.M. Same night in the year, according to extra-terrestrial calendars: the year 1876 was a leap year.

If they had been ordinary meteors, by coincidence two ordinary meteors of the same stream might, exactly two years apart, come from almost the same point in the heavens and strike almost the same point over this earth. But they were two of the most extraordinary occurrences in the records of explosions in the sky. Coincidences multiply, or these objects did come from the not far-distant constellation Cassiopeia, and their striking so closely together indicates that this earth is stationary; and something of the purposeful may be thought of. Serially related to these events, or representing some more coincidence, there had been, upon June 9, 1866, a tremendous explosion in the sky of Knysahinya, Hungary, and about a thousand stones had fallen from the sky (*Rept. B. A.,* 1867-430). Rosenau and Knysahinya are about 75 miles apart. Of course one can very much extend our own circumscribed little notions, and think of the firing of projectiles from beyond the stars, just as one can think of our unknown lands as being not in the immediate sky of Servia or Birmingham or Comrie, but as being beyond the nearby stars, reducing everything more than we have reduced—but the firing of stones to this earth seems crude to me. Of course, objects, or fragments of objects made of steel, like the manufactured steel of this earth, have fallen to this earth, and are now in collections of "meteorites." There is a story in a book that is not very accessible to us, because it can't be found along with *C. R.,* or *Eng. Mec.,* or L' *Astro.,* of tablets of stone that were once upon a time fired to this earth. It may be that inhabitants of this earth have been receiving instructions ever since, engravings arriving very badly damaged, however.

I have data upon repeating appearances, said to have been "auroral," in a local sky. If they were auroral, repetitions at regular intervals and so localized are challengers to the most resolute of explainers. If they were of extra-mundane origin, they indicate that this earth is stationary. The regularity is suggestive of signaling. For instance—a light in the sky of Lyons, N. Y., Dec. 9, 1891, Jan. 5, Feb. 2, Feb. 29, March 27, April 23, 1892. In the *Scientific American,* May 7, 1892, Dr. M. A. Veeder writes that, from Dec. 9, 1891, to April 23, 1892, there had been a bright light that he calls "auroral" in the sky of Lyons, every 27th night. He associates the lights with the sun's synodic period, and says that upon each of the days preceding a nocturnal display, there had been a disturbance in the sun. How a disturbance in the sun could, at night, sun somewhere near the antipodes of Lyons, N. Y., so localize its effects, one can't clear up. In *Nature,* 46-29,

Dr. Veeder associates the phenomena with the synodic period of the sun, but he says that this period is of 27 days, 6 hours, and 47 minutes, noting that this period is inconsistent with the phenomena at Lyons, making more than a day's difference in the time of his records. This precise determination is more of the "exact science" that is driving some of us away from refinements into hoping for caves. Different parts of the sun move at different rates: I have read of sun spots that moved diagonally across the sun.

In *Nature*, 15-451, a correspondent writes that, at 8:55 P.M., he saw a large red star in Serpens, where he had never seen such an appearance before—Gunnersbury, March 17, 1877. Ten minutes later, the object increased and decreased several times, flashing like the revolving light of a lighthouse, then disappearing. This correspondent writes that, about 10 P.M., he saw a great meteor. He suggests no relation between the two appearances, but there may have been relation, and there may be indication of something that was stationary at least one hour over Gunnersbury, because the object said to have been a "meteor" was first seen at Gunnersbury. In the *Observatory*, 1-20, Capt. Tupman writes that, at 9:57 o'clock, a great meteor was seen first at Frome, Tetbury, and Gunnersbury. The red object might not have been in the local sky of Gunnersbury; might have been in the constellation Serpens, unseen in all the rest of the world.

There is a great field of records of "meteors" that, with no parallax, or with little parallax, or with little parallax that may be accounted for by supposing that observations were not quite simultaneous, have been seen to come as if from a star or from a planet, and that may have come from such points, indicating that they are not far away. For instance, *Rept. B. A.*, 1879-77 —the great meteor of Sept. 5, 1868. It was seen, at Zurich, Switzerland, to come from a point near Jupiter; at Tremont, France, origin was so close to Jupiter that this object and the planet were seen in the same telescopic field; at Bergamo, Italy, it was seen five or six degrees from Jupiter. Zurich is about 140 miles from Bergamo, and Tremont is farther from Zurich and Bergamo than that.

So there are data that indicate that objects have come to this earth from planets or from stars, enforcing our idea that the remotest planet is not so far from this earth as the moon is said, conventionally, to be; and that the stars, all equi-distant from this earth might be reached by traveling from this earth. One notices that I always conclude that, if phenomena repeatedly

occur in one local sky of this earth, their origin is traceable to a fixed place over a stationary earth. The fixed place over this earth is indicated, but that fixed place—island of space, foreign coast, whatever it may be—may be conceived of as accompanying this earth in its rotations and revolutions around the sun. Accepting that nothing much is known of gravitation; that gravitational astronomy is a myth; that attraction may extend but a few miles around this earth, if I can think of something hanging unsupported in space, I always think of an island, say, over Birmingham, or Irkutsk, or Comrie, as soon flying off by the centrifugal force of a rotating earth, or as being soon left behind in a rush around the sun. Nevertheless there is good room for discussion here. But when it comes to other orders of data, I find one convergence toward the explanation that this earth is stationary. But the subject is supposed to be sacred. One must not think that this earth is stationary. One must not investigate. To think upon this subject, except as one is told to think, is, or seems to be considered, impious.

But how can one account for an earth that moves?

By thinking that something started it and that nothing ever stopped it.

Earth that doesn't move?

That nothing ever started it.

Some more sacrilege.

26

IF a grasshopper could hop on a cannon ball, passing overhead, I could conceive, perhaps, how something, from outer space, could flit to a moving earth, explore a while, and then hop off.

But suppose we have to accept that there have been instances of just such enterprise and agility, relatively to the planet Venus. Irrespective of our notion that it may be that sometimes a vessel sails to this earth from Venus and returns, there are striking data indicating that, whether conceivable or not, luminous objects have appeared from somewhere, or presumably from outer space, and have been seen temporarily suspended over the planet Venus. This is in accord with our indications that there are regions in the sky suspended over and near this earth. It looks bad for our inference that this earth is stationary, but it is the supposed rotary motion of this earth more than the supposed orbital motion that seems to us would dislodge such neighboring bodies; and all astronomers, except those who say that Venus rotates in about 24 hours, say that Venus rotates in about 224 days, a velocity that would generate little centrifugal force.

I have a note upon a determined luminosity that was bent upon Saturn, as its objective. In the *English Mechanic,* 63-496, a correspondent writes that, upon July 13, 1896, he saw, through his telescope, from 10 until after 11:15 P.M., after which the planet was too near the horizon for good seeing, a luminous object moving near Saturn. He saw it pass several small stars. “It was certainly going toward Saturn at a good rate.” There may be swifts of the sky that can board planets. If they can swoop on and off an earth moving at a rate of 19 miles a second, disregarding rotation, because entrance at a pole may be thought of, why, then, for all I know smaller things do ride on cannon balls. Of course if our data that indicate that the supposed solar system, or the geo-system, is to an enormous degree smaller than is conventionally taught be accepted, the orbital velocity of Venus is far cut down.

About the last of August, 1873—Brussels; eight o’clock in the evening—rising above the horizon, into a clear sky, was *seen a* star-like object. It

mounted higher and higher, until, about ten minutes later, it disappeared (*La Nature,* 1873-239). It seems that this conspicuous object did appear in a local sky, and was therefore not far from this earth. If it were not a fire-balloon, one supposes that it did come from outer space, and then returned.

Perhaps a similar thing that visited the moon, and was then seen sailing away—in the *Astronomical Register,* 23-205, Prof. Schafarik, of Prague, writes that upon April 24, 1874, he saw "an object of so peculiar a nature that I do not know what to make of it." He saw a dazzling white object slowly traversing the disc of the moon. He had not seen it approaching the moon. He watched it after it left the moon. Sept. 27, 1881—South Africa — an object that was seen near the moon, by Col. Markwick—like a comet but moving rapidly (*Jour. Liverpool Astro. Soc.*, 7-117).

Our chief interest is in objects, like ships, that have "boarded" this moving earth with the agility of a Columbus who could dodge a San Salvador and throw out an anchor to an American coast screeching past him at a rate of 19 miles a second, or in objects that have come as close as atmospheric conditions, or unknown conditions, would permit to the bottom of a kind of stationary sea. We now graduate Capt. Noble to the extra-geographic fold. In *Knowledge,* 4-173, Capt. Noble writes that, at 10:35 o'clock, night of Aug. 28, 1883, he saw in the sky something "like a new and most glorious comet." First he saw something like the tail of a comet, or it was like a searchlight, according to Capt. Noble's sketch of it in *Knowledge.* Then Capt. Noble saw the nucleus from which this light came. It was a brilliant object. Upon page 207, W. K. Bradgate writes that, at 12:40 A.M., August 29, at Liverpool, he saw an object like the planet Jupiter, a ray of light emanating from it. Upon the nights of September 11 and 13, Prof. Swift saw, at Rochester, N. Y., an unknown object like a comet, perhaps in the local sky of Rochester, inasmuch as it was reported from nowhere else (*Observatory,* 6-345). In *Knowledge,* 4-219, Mrs. Harbin writes that, upon the night of September 21, at Yeovil, she saw the same brilliant searchlight-like light that had been seen by Capt. Noble, but that it had disappeared before she could turn her telescope upon it. And several months later (November, 1883) a similar object was seen obviously not far away, but in the local sky of Porto Rico and then of Ohio (*Amer. Met. Jour.*, 1-110, and *Sci. Amer.*, 50-40, 97). It may be better not to say at this time that we have data for thinking that a vessel carrying something like a searchlight, visited this earth, and explored for several months over regions

as far apart as England and Porto Rico. Just at present it is enough to record that something that was presumably not a fire-balloon appeared in the sky of England, close to this earth, if seen nowhere else, and in two hours traversed the distance of about 200 miles between Sussex and Liverpool.

Aug. 22, 1885—Saigon, Cochin-China—according to Lieut. Réveillere, of the vessel *Guiberteau*—object like a magnificent red star, but larger than the planet Venus—it moved no faster than a cloud in a moderate wind; observed 7 or 8 minutes, then disappearing behind clouds (C. *R.*, 101-680).

In this book it is my frustrated desire to subordinate the theme of this earth's stationariness. My subject is New Lands—things, objects, beings that are, or may be, the data of coming expansions—

But the stationariness of this earth cannot be subordinated. It is crucial.

Again—there is no use discussing possible explorations beyond this earth, if this earth moves at a rate of 19 miles a second, or 19 miles a minute.

As to voyagers who may come to or near this earth from other planets—how could they leave and return to swiftly moving planets? According to our principles of Extra-geography, the planets move part of the time with the revolving stars, the remotest planets remaining in, under, or near one constellation years at a time. Any thing that could reach, and then travel from, a swiftly revolving constellation in the ecliptic could arrive at a stellar polar region, where, relatively to a central, stationary body, there is no motion.

27

IT may be that we now add to our sins the horse that swam in the sky. For all I know, we contribute to a wider biology. In the *New York Times*, July 8, 1878, is published a dispatch from Parkersburg, West Virginia: that, about July 1, 1878, three or four farmers had seen, in a cloudless sky, apparently half a mile high, "an opaque substance." It looked like a white horse, "swimming in the clear atmosphere." It is said to have been a mirage of a horse in some distant field. If so, it is interesting not only because it was opaque, but because of a selection or preference: the field itself was not miraged.

Black bodies and the dark rabbles of the sky—and that rioting thing, from floating anarchies, have often spotted the sun. Then, by all that is compensatory, in the balances of existence, there are disciplined forces in space. In the *Scientific American*, 44-291, it is said that, according to newspapers of Delaware, Maryland, and Virginia, figures had been seen in the sky in the latter part of September, and the first week in October, 1881, reports that "exhibited a mediaeval condition of intelligence scarcely less than marvelous." The writer suggests that, though probably something had been seen in the sky, it was only an aurora. Our own intelligence and that of astronomers and meteorologists and everybody else with whom we have had experience had better not be discussed, but the accusation of mediævalism is something that we're sensitive about, and we hasten to the *Monthly Weather Review,* and if that doesn't give us a modern touch, I mistake the sound of it. *Monthly Weather Review,* September and October, 1881—an auroral display in Maryland and New York, upon the 23rd of September; all other auroras in September far north of the three states in which it was said phenomena were seen. October—no auroras until the 18th; that one in the north. There was a mirage upon September 23, but at Indianola; two instances in October, but late in the month, and in northern states.

It is said, in the *Scientific American,* that, according to the *Warrentown* (Va.) *Solid South,* a number of persons had seen white-robed figures in the

sky, at night. The story in the *Richmond Dispatch* is that many persons had seen, or had thought they had seen, an alarming sight in the sky, at night: a vast number of armed, uniformed soldiers drilling. Then a dispatch from Wilmington, Delaware—platoons of angels marching and countermarching in the sky, their white robes and helmets gleaming. Similar accounts came from Laurel and Talbot. Several persons said that they had seen, in the sky, the figure of President Garfield, who had died not long before. Our general acceptance is that all reports upon such phenomena are colored in terms of appearances and subjects uppermost in minds.

L'Astronomie, 1888-392:

That, about the first of August, 1888, near Warasdin, Hungary, several divisions of infantry, led by a chief, who waved a flaming sword, had been seen in the sky, three consecutive days, marching several hours a day. The writer in L'*Astronomie* says that in vain does one try to explain that this appearance was a mirage of terrestrial soldiers marching at a distance from Warasdin, because widespread publicity and investigation had disclosed no such soldiers. Even if there had been terrestrial soldiers near Warasdin repeating mirages localized would call for explanation.

But that there may be space-armies, from which reflections or shadows or Brocken specters are sometimes cast—a procession that crossed the sun: forms that moved, or that marched, sometimes four abreast; observation by M. Bruguiére, at Marseilles, April 15 and 16, 1883 (*L'Astro.*, 5-70). An army that was watched, forty minutes, by M. Jacquot, Aug. 30, 1886 (L*'Astro.*, 1886-71) —things or beings that seemed to march and to countermarch: all that moved in the same direction, moved in parallel lines. In L'*Année Scientifique*, 29-8, there is an account of observations by M. Trouvelot, Aug. 29, 1871. He saw objects, some round, some triangular, and some of complex forms. Then occurred something that at least suggests that these things were not moving in the wind, nor sustained in space by the orbital forces of meteors; that each was depending upon its own powers of flight, and that an accident occurred to one of them. All of them, though most of the time moving with great rapidity, occasionally stopped, but then one of them fell toward the earth, and the indications are that it was a heavy body, and had not been sustained by the wind, which would scarcely suddenly desert one of its flotsam and continue to sustain all the others. The thing fell, oscillating from side to side like a disc falling through water.

New York Sun, March 16, 1890—that, at 4 o'clock, in the afternoon of March 12th, in the sky of Ashland, Ohio, was seen a representation of a large, unknown city. By some persons it was supposed to be a mirage of the town of Mansfield, thirty miles away; other observers thought that they recognized Sandusky, sixty miles away. "The more superstitious declared that it was a vision of the New Jerusalem."

May have been a revelation of heaven, and for all I know heaven may resemble Sandusky, and those of us who have no desire to go to Sandusky may ponder that point, but our own expression is that things have been pictured in the sky, and have not been traced to terrestrial origins, but have been interpreted always in local terms. Probably a living thing in the sky—seen by farmers—a horse. Other things, or far-refracted images, or shadows—and they were supposed to be vast lions or soldiers or angels, all according to preconceived ideas. Representations that have been seen in India— Hindoo costumes described upon them. Suppose that, in the afternoon of Jan. 17, 1892, there was a battle in the sky of Montana— we know just about in what terms the description would be published. *Brooklyn Eagle*, Jan. 18, 1892—a mirage in the sky of Lewiston, Montana—Indians and hunters alternately charging and retreating. The Indians were in superior numbers and captured the hunters. Then details—hunters tied to stakes; the piling of faggots; etc. "So far as could be ascertained last night, the Indians on the reservations are peaceable." I think that we're peaceable enough, but, unless the astronomers can put us on reservations, where we'll work out expressions in beads and wampum instead of data, we'll have to carry on a conflict with the vacant minds to which appear mirages of their own emptiness in the sometimes swarming skies.

Altogether there are many data indicating that vessels and living things of space do come close to this earth, but there is absence of data of beings that have ever landed upon this earth, unless someone will take up the idea that Kaspar Hauser, for instance, came to this earth from some other physical world. Whether spacarians have ever dredged down here or not, or "sniped" down here, pouncing, assailing, either wantonly, or in the interests of their sciences, there are data of seeming seizures and attacks from somewhere, and I have strong objections against lugging in the fourth dimension, because then I am no better off, wondering what the fifth and sixth are like.

In *La Nature*, 1888-2-66, M. Adrian Arcelin writes that, while excavating near de Solutré, in August, 1878, upon a day, described as *superbe*, sky

clear to a degree said to have been *parfaitement,* several dozen sheets of wrapping paper upon the ground suddenly rose. Nearby were a dozen men, and not one of them had felt a trace of wind. A strong force had seized upon these conspicuous objects, touching nothing else. According to M. Arcelin, the dust on the ground under and around was not disturbed. The sheets of paper continued upward, and disappeared in the sky.

A powerful force that swooped upon a fishing vessel, raising it so far that when it fell back it sank—see London *Times,* Sept. 24, 1875. A quarter of a mile away were other vessels, from which set out rescuers to the sailors who had been thrown into the sea. There was no wind: the rescuers could not use sails, but had to row their boats.

Upon Oct. 2, 1875, a man was trundling a cart from Schaff-hausen, near Beringen, Germany. His right arm was perforated from front to back, as if by a musket ball (*Pop. Sci.,* 15-566). This man had two companions. He had heard a whirring sound, but his companions had heard nothing. At one side of the road there were laborers in a field, but they were not within gunshot distance. Whatever the missile may have been, it was unfindable.

La Nature, 1879-1-166, quotes the *Courrier des Ardennes* as to an occurrence in the Commune Signy-le-Pettit, Easter Sunday, 1879—a conspicuous, isolated house—suddenly its slate roof shot into the air, and then fell to the ground. There had not been a trace of wind. The writer of the account says that the force, which he calls a *trouble inoui* had so singled out this house that nothing in its surroundings beyond a distance of thirty feet had been disturbed.

Scientific American, July 10, 1880—that, according to the *Plaindealer,* of East Kent, Ontario, two citizens of East Kent were in a field, and heard a loud report. They saw stones shooting upward from a field. They examined the spot, which was about 16 feet in diameter, finding nothing to suggest an explanation of the occurrence. It is said that there had been neither a whirlwind nor anything else by which to explain.

It may be that witnesses have seen human beings dragged from our own existence either into the objectionable fourth dimension, perhaps then sifting into the fifth, or up to the sky by some exploring thing. I have data, but they are from the records of psychic research. For instance, a man has been seen walking along a road—sudden disappearance. Explanation—that he was not a living human being, but an apparition that had disappeared. I have not been able to develop such data, finding, for instance, that someone

in the neighborhood had been reported missing; but it may be that we can find material in our own field.

Upon Dec. 10, 1881, Walter Powell and two companions ascended from Bath in the Government balloon *Saladin* (Valentine and Tom-linson, *Travels in Space,* p. 227). The balloon descended at Brid-port, coast of the English Channel. Two of the aeronauts got out, but the balloon, with Powell in it, shot upward. There was a report that the balloon had been seen to fall in the English Channel, near Bridport, but according to Capt. Temple, one of Powell's companions, probably something thrown from the balloon had been seen to fall.

A balloon is lost near or over the sea. If it should fall into the sea it would probably float and for considerable time be a conspicuous object; nevertheless the disappearance of a balloon last seen over the English Channel, cannot, without other circumstances, be considered very mysterious. Now one expects to learn of reports from many places of supposed balloons that had been seen. But the extraordinary circumstance is that reports came in upon a luminous object that was seen in the sky at the time that this balloon disappeared. In the London *Times,* it is said that a luminous object had been seen, evening of the 13th, moving in various directions in the sky near Cherbourg. It is said that upon the night of the 16th three customhouse guards, at Laredo, Spain, had seen something like a balloon in the sky, and had climbed a mountain in order to see it better, but that it had shot out sparks and had disappeared—and had been reported from Bilbao, Spain, the next day. In the *Morning Post,* it is said that this luminous display was the chief feature; that it was this sparkling that had made the object visible. In the *Standard,* December 16, is an account of something that was seen in the sky, five o'clock, morning of December 15, by Capt. McBain, of the steamship *Countess of Aberdeen,* off the coast of Scotland, 25 miles from Montrose. Through glasses, the object seemed to be a light attached to something thought to be the car of a balloon, increasing and decreasing in size—a large light—"as large as the light at Girdleness." It moved in a direction opposite to that of the wind, though possibly with wind of an upper stratum. It was visible half an hour, and when it finally disappeared, was moving toward Bervie, a town on the Scottish coast about 12 miles north of Montrose. In the *Morning Post* it is said that the explanation is simple: that someone in Monfreith, 8 miles from Dundee, had, late in the evening of the 15th, sent up a fire-balloon, "which

had been carried along the coast by a gentle breeze, and, after burning all night, extinguished and collapsed off Montrose, early on Thursday morning (16th).” This story of a balloon that wafted to Montrose, and that was evidently traced until it collapsed near Montrose does not so simply explain an object that was seen 25 miles from Montrose. In the *Standard,* December 19, it is said that two bright lights were seen over Dartmouth Harbor, upon the nth.

Walter Powell was Member of Parliament for Malmesbury, and had many friends, some of whom started immediately to search. His relatives offered a reward. A steamboat searched the Channel, and did not give up until the 13th; fishing vessels kept on searching. A “sweeping expedition” was organized, and the coast guard was doubled, searching the shore for wreckage, but not a fragment of the balloon, nor from the balloon, except a thermometer in a bag, was found.

In *L’Astronomie,* 1886-312, Prof. Paroisse, of the College Barsur-Aube, quotes two witnesses of a *curieux phénomenè* that occurred in a garden of the College, May 22, 1886—cloudless sky; wind *tres faible.* Within a small circle in the garden were some baskets and ashes and a window frame that weighed sixty kilograms. These things suddenly rose from the ground. At a height of about forty feet, they remained suspended several minutes, then falling back to the place from which they had risen. Not a thing outside this small circle had been touched by the seizure. The witnesses said that they had felt no disturbance in the air.

Scientific American, 56-65—that in June, 1886, according to the London *Times, ‘‘a* well-known official” was entering Pall Mall, when he felt a violent blow on the shoulder and heard a hissing sound. There was no one in sight except a distant policeman. At home, he found that the nap of his coat looked as if a hot wire had been pressed against the cloth, in a long, straight line. No missile was found, but it was thought that something of a meteoritic nature had struck him.

Charleston News and Courier, Nov. 25, 1886—that, at Edina, Mo., November 23, a man and his three sons were pulling corn on a farm. Nothing is said of meteorologic conditions, and, for all I know, they may have been pulling corn in a violent thunder storm. Something that is said to have been lightning flashed from the sky. The man was slightly injured, one son killed, the other seriously injured—the third had disappeared. “What

has become of him is not known, but it is supposed that he was blinded or crazed by the shock, and wandered away."

Brooklyn Eagle, March 17,1891—that, at Wilkes-Barre, Pa., March 16th, two men were "lifted bodily and carried considerable distance in a whirlwind." It was a powerful force, but nothing else was affected by it. Upon the same day, there was an occurrence in Brooklyn. In the *New York Times,* March 17, 1891, it is said that two men, Smith Morehouse, of Orange Co., N. Y., and William Owen, of Sussex Co., N. J., were walking in Vanderbilt Avenue, Brooklyn, about 2 o'clock, afternoon of the 16th, when a terrific explosion occurred close to the head of Morehouse, injuring him and stunning Owen, the flash momentarily blinding both. More-house's face was covered with marks like powder-marks, and his tongue was pierced. With no one else to accuse, the police arrested Owen, but held him upon the technical charge of intoxication. Morehouse was taken to a hospital, where a splinter of metal, considered either brass or copper, but not a fragment of a cartridge, was removed from his tongue. No other material could be found, though an object of considerable size had exploded. Morehouse's hat had been perforated in six places by unfindable substances. According to witnesses there had been no one within a hundred feet of the men. One witness had seen the flash before the explosion, but could not say whether it had been from something falling or not. In the *Brooklyn Eagle,* March 17, 1891, it is said that neither of the men had a weapon of any kind, and that there had been no disagreement between them. According to a witness, they had been under observation at the time of the explosion, her attention having been attracted by their rustic appearance.

There is an interesting merging here of the findable and the un-findable. I suppose that no one will suppose that someone threw a bomb at these men. But enough substance was found to exclude the notion of "lightning from a clear sky." Something of a meteoritic nature seems excluded.

28

OUT from a round, red planet, a little white shaft—a fairy's arrow shot into an apple. June 10, 1892—a light like a little searchlight, projecting from the limb of Mars. Upon July 11 and 13, it was seen again, by Campbell and Hussey (*Nature*, 50-500).

Aug. 3, 1892—climacteric opposition of Mars.

Upon Aug. 12, 1892, flashes were seen by many persons, in the sky of England. See *Eng. Mec.*, vol. 56. At Manchester, so like signals were they, or so unlike anything commonly known as "auroral" were they, that Albert Buss mistook them for flashes from a lighthouse. They were seen at Dewsbury; described by a correspondent to the *English Mechanic*, who wrote: "I have never seen such an appearance of an aurora." "Rapid flashes" reported from Loughborough.

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A shining triangle in a dark circle.

In L'*Astronomie*, 1888-75, Dr. Klein publishes an account of de Speissen's observation of Nov. 23, 1887—a luminous triangle on the floor of Plato. Dr. Klein says it was an effect of sunlight.

In this period, there were in cities of the United States, some of the most astonishing effects at night, in the history of this earth. If Rigel should run for the Presidency of Orion, and if the stars in the great nebula should start to march, there would be a spectacle like those that Grover Cleveland called forth in the United States, in this period.

So then—at least conceivably—something similar upon the moon. Flakes of light moving toward Plato, this night of Nov. 23, 1887, from all the other craters of the moon; a blizzard of shining points gathering into light-drifts in Plato; then the denizens of Aristarchus and of Kepler, and dwellers from the lunar Alps, each raising his torch, marching upon a triangular path, making the triangle shine in the dark—conceivably. Other formations have been seen in Plato, but, according to my records, this symbol that shone in the dark had never been seen before, and has not been seen since.

About two years later—a demonstration of a more exclusive kind — assemblage of all the undertakers of the moon. They stood in a circular formation, surrounded by virgins in their nightgowns— and in nightgowns as nightgowns should be. An appearance in Plinius, Sept. 13, 1889, was reported by Prof. Thury, of Geneva— a black spot with an "intensely white" border.

March 30, 1889—a black spot that was seen for the first time, by Gaudibert, near the center of Copernicus (L*'Astro.,* 1890-235). May 11, 1889—an object as black as ink upon a rampart of Gassendi (*L'Astro.,* 1889-275). It had never been reported before; at the time of the next lunation, it was not seen again. March 30, 1889 —a new black spot in Plinius (L'*Astro.,* 1890-187).

The star-like light of Aristarchus—it is a long time since latest preceding appearance (May 7, 1867). Then it cannot be attributed to commonplace lunar circumstances. The light was seen Nov. 7, 1891, by M. d'Adjuda, of the Observatory of Lisbon—"a very distinct, luminous point" (*L'Astro.,* 11-33).

Upon April 1, 1893, a shaft of light was seen projecting from the moon, by M. de Moraes, in the Azores. A similar appearance was seen, Sept. 25, 1893, at Paris, by M. Gaboreau (*L'Astro., 13-34*

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Another association like that of 1884—in the *English Mechanic,* 55-310, a correspondent writes that, upon May 6, 1892, he saw a shining point (not polar) upon Venus. Upon the 13th of August, 1892, the same object—conceivably—was seen at a short distance from Venus—an unknown, luminous object, like a star of the 7th magnitude that was seen close to Venus, by Prof. Barnard (*Ast. Nach.,* no. 4106).

Upon Aug. 24, 1895, in the period of primary maximum brilliance of Venus, a luminous object, it is said, was seen in the sky, in day time, by someone in Donegal, Ireland. Upon this day, according to the *Scientific American,* 73-374, a boy, Robert Alcorn, saw a large luminous object falling from the sky. It exploded near him. The boy's experience was like Smith Morehouse's. He put his hands over his face: there was a second explosion, shattering his fingers. According to Prof. George M. Minchin no substance of the object that had exploded could be found. Whether there be relation or not, something was seen in the sky of England a week later. In the London *Times,* Sept. 4, 1895, Dr. J. A. H. Murray writes that, at Oxford,

a few minutes before 8 P.M., Aug. 31, 1895, he saw in the sky a luminous object, considerably larger than Venus at greater brilliance, emerge from behind tree tops, and sail slowly eastward. It moved as if driven in a strong wind, and disappeared behind other trees. “The fact that it so perceptibly grew fainter as it receded seems to imply that it was not at a great elevation, and so favors a terrestrial origin, though I am unable to conceive how anything artificial could have presented the same appearance.” In the *Times*, of the 6th, someone who had read Dr. Murray’s letter says that, about the same time, same evening, he, in London, had seen the same object moving eastward so slowly that he had thought it might be a fire-balloon from a neighboring park. Another correspondent, who had not read Dr. Murray’s letter, his own dated September 3, writes from a place not stated that about 8:20 P.M., August 31, he had seen a star-like object, moving eastward, remaining in sight four or five minutes. Then someone who, about 8 P.M., same evening, while driving to the Scarborough station, had seen “a large shooting star,” astonishing him, because of its leisurely rate, so different from the velocity of the ordinary “shooting star.” There are two other accounts of objects that were seen in the sky, at Bath and at Ramsgate, but not about this time, and I have looked them up in local newspapers, finding that they were probably meteors.

In the *Oxford Times*, September 7, Dr. Murray’s letter to the London *Times* is reprinted, with this comment—”We would suggest to the learned doctor that the supposed meteor was one of the fire-balloons let off with the allotments show.”

Let it be that when allotments are shown, balloons are always sent up, and that this Editor did not merely have a notion to this effect. Our data are concerned with an object that was seen, at about the same time, at Oxford, about 50 miles southeast of Oxford, and about 170 miles northeast of Oxford, with a fourth observation that we cannot place.

And, in broader terms, our data are concerned with a general expression that objects like ships have been seen to sail close to this earth at times when the planet Venus is nearest this earth. Sept. 18, 1895—inferior conjunction of Venus.

Still in the same period, there were, in London, two occurrences perhaps like that at Donegal. London *Morning Post*, Nov. 16, 1895—that, at noon, November 15, an “alarming explosion” occurred somewhere near Fenchurch Street, London. No damage was done; no trace could be found

of anything that had exploded. An hour later, near the Mansion House, which is not far from Fenchurch Street, occurred a still more violent explosion. The streets filled with persons who had run from buildings, and there was investigation, but not a trace could be found of anything that had exploded. It is said that somebody saw "something falling." However, the deadly explainers, usually astronomers, but this time policemen, haunt or arrest us. In the *Daily News*, though it is not said that a trace of anything that had exploded had been found, it is said that the explanation by the police was that somebody had mischievously placed in the streets fog-signals, which had been exploded by passing vehicles.

Observation by Müller, of Nymegen, Holland—an unknown luminous object that, about three weeks later, was seen near Venus (*Monthly Notices, R. A. S.*, 52-276).

Upon the 28th of April, 1897, Venus was in inferior conjunction. In *Popular Astronomy,* 5-55, it is said that many persons had written to the Editor, telling of "airships" that had been seen, about this time. The Editor writes that some of the observations were probably upon the planet Venus, but that others probably related to toy balloons, "which were provided with various colored lights."

The first group of our data, I take from dispatches to the *New York Sun*, April 2, 11, 16, 18. First of April—"the mysterious light" in the sky of Kansas City—something like a powerful search-light. "It was directed toward the earth, traveling east at a rate of sixty miles an hour." About a week later, something was seen in Chicago. "Chicago's alleged airship is believed to be a myth, in spite of the fact that a great many persons say that they have seen the mysterious night-wanderer. A crowd gazed at strange lights, from the top of a downtown skyscraper, and Evanston students declare they saw the swaying red and green lights." April 16—reported from Benton, Texas, but this time as a dark object that passed across the moon. Reports from other towns in Texas: Fort Worth, Dallas, Marshall, Ennis, and Beaumont—"It was shaped like a Mexican cigar, large in the middle, and small at both ends, with great wings, resembling those of an enormous butterfly. It was brilliantly illuminated by the rays of two great searchlights, and was sailing in a southeasterly direction, with the velocity of the wind, presenting a magnificent appearance."

New York Herald, April 11—that, at Chicago, night of April 9-10, "until two o'clock in the morning, thousands of amazed spectators declared that

the lights seen in the northwest were those of an airship, or some floating object, miles above the earth. . . . Some declare they saw two cigar-shaped objects and great wings." It is said that a white light, a red light, and a green light had been seen.

There does seem to be an association between this object and the planet Venus, which upon this night was less than three weeks from nearest approach to this earth. Nevertheless this object could not have been Venus, which had set hours earlier. Prof. Hough, of the Northwestern University, is quoted—that the people had mistaken the star *Alpha Orionis* for an airship. Prof. Hough explains that astronomeric effects may have given a changing red and green appearance to this star. *Alpha Orionis* as a northern star is some more astronomy by the astronomers who teach astronomy daytimes and then relax when night comes. That atmospheric conditions could pick out this one star and not affect other brilliant stars in Orion is more astronomy. At any rate the standardized explanation that the thing was Venus disappears.

There were other explainers—someone who said that he knew of an airship (terrestrial one) that had sailed from San Francisco. and had reached Chicago.

Herald, April 12—said that the object had been photographed in Chicago: "a cigar-shaped, silken bag," with a framework— other explanations and identifications, not one of them applying to this object, if it be accepted that it was seen in places as far apart as Illinois and Texas. It is said that, upon March 29th, the thing had been seen in Omaha, as a bright light sailing to the northwest, and that, for a few moments, upon the following night, it had been seen in Denver. It is said that, upon the night of the 9th, despatches had bombarded the newspaper offices of Chicago, from many places in Illinois, Indiana, Missouri, Iowa, and Wisconsin.

"Prof. George Hough maintains that the object seen is *Alpha Orionis."*

April 14—story, veritable observation, yarn, hoax—despatch from Carlensville, Ill.—that upon the afternoon of the 10th, the airship had alighted upon a farm, but had sailed away when approached —"cigar-shaped, with wings, and a canopy on top."

April 15—shower of telegrams—development of jokers and explainers—thing identified as an airship invented by someone in Dodge City, Kansas; identified as an airship invented by someone in Brule, Wisconsin—stories of letters found on farms, purporting to have been dropped by the unknown

aeronauts (terrestrial ones)—jokers in various towns, sending up balloons with lights attached—one laborious joker who rigged up something that looked like an airship and put it in a vacant lot and told that it had fallen there—yarn or observation, upon a "queer-looking boat" that had been seen to rise from the water in Lake Erie—continued reports upon a moving object in the sky, and its red and green lights.

Against such an alliance as this, between the jokers and the astronomers, I see small chance for our data. The chance is in the future. If, in April, 1897, extra-mundane voyagers did visit this earth, likely enough they will visit again, and then the alliance against the data may be guarded against.

New York Herald, April 20—that, upon the 19th, about 9 P.M., at Sistersville, W. Va., a luminous object had approached the town from the northwest, flashing brilliant red, white, and green lights. "An examination with strong glasses left an impression of a huge cone-shaped arrangement 180 feet long, with large fins on either side."

My own general impression:

Night of Oct. 12, 1492—if I have that right. Some night in October, 1492, and savages upon an island-beach are gazing out at lights that they had never seen before. The indications are that voyagers from some other world are nearby. But the wise men explain. One of the most nearly sure expressions in this book is upon how they explain. They explain in terms of the familiar. For instance, after all that is spiritual in a fish passes away, the rest of him begins to shine nights. So there are three big, old, dead things out in the water—

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THERE have been published several observations upon a signal-like regularity of the Barisal Guns, which, because unaccompanied by phenomena that could be considered seismic, may have been detonations in the sky, and which, because, according to some hearers, they seemed to come from the sky, may have come from some region stationary in the local sky of Barisal. In *Nature*, 61-127, appears a report by Henry S. Schurr, who investigated the sounds in the years 1890-91:

"These Guns are always heard in triplets, i.e., three guns are always heard, one after the other, at regular intervals, and, though several guns may be heard, the number is always three or a multiple of three. Then the interval between the three is always constant, i.e., the interval between the first and the second is the same as the interval between the second and the third, and this interval is usually three seconds, though I have heard it up to ten seconds. The interval, however, between the triplets varies, and varies largely, from a few seconds up to hours and days. Sometimes only one series of triplets is heard in a day; at others the triplets follow with great regularity, and I have counted as many as forty-five of them, one after the other, without pause."

In vols. 16 and 17, *Ciel et Terre*, M. Van den Broeck published a series of papers upon the mysterious sounds that had been heard in Belgium.

July, 1892—heard near Brée, by Dr. Raemaekers, of Antwerp—detonations at regular intervals of about 12 seconds, repeated about 20 times.

Aug. 5, 1892—near Dunkirk, by Prof. Gerard, of Brussels—four reports like sounds of cannons.

Aug. 17, 1893—between Ostend and Ramsgate, by Prof. Gerard —a series of distinct explosions—state of the sky giving no reason to think that they were meteorological manifestations.

Sept. 5, 1893—at Middelkirke—loud sounds of remarkable intensity.

Sept. 8, 1893—English Channel near Dover—by Prof. Gérard— an explosive sound.

In *Ciel et Terre*, 16-485, M. Van den Broeck records an experience of his own. Upon June 25, 1894, at Louvain, he had heard detonations like discharges of artillery: he tabulates the intervals in a series of sounds. If there were signaling from some unknown region over Belgium, and not far from the surface of this earth, or from extra-mundane vessels, and if there were something of the code-like, resembling the Morse alphabet, perhaps, in this series of sounds, there can be small hope of interpreting such limited material, but there may be suggestion to someone to record all sounds and their intervals and modulations, if, with greater duration, such phenomena should ever occur again. The intervals were four minutes and twenty-three minutes; then three minutes, four, three quarters, three and three quarters, three quarters.

Sept. 16, 1895—a triplet of detonations, heard by M. de Schryvere, of Brussels.

There were attempts to explain. Some of M. Van den Broeck's correspondents thought that there had been firing from forts on the coast of England, and somebody thought that the phenomena should be attributed to gravitational effects of the moon. Upon Sept. 13, 1895, four shocks were felt and sounds heard at Southampton: a series of three and then another (*Nature*, 52-552); but I have no other notes upon sounds that were heard in England at this time, except the two explosions that were explained by the police of London. However, M. Van den Broeck says that Mr. Harmer, of Aldeburgh, Suffolk, had, about the first of November, heard booming sounds that had been attributed to cannonading at Harwich. Mr. Harmer had heard other sounds that had been attributed to cannonading somewhere else. He could not offer a definite opinion upon the first sounds, but had investigated the others, learning that the attribution was a mistake.

It was M. de Schryvere's opinion that the triplet of detonations that he had heard was from vessels in the North Sea. But now, according to developments, the sounds of Belgium cannot very well be attributed to terrestrial cannonading in or near Belgium: in *Ciel et Terre*, 16-614, are quoted two artillery officers who had heard the sounds, but could not so trace them: one of these officers had heard a series of detonations with intervals of about two minutes. A variety of explanations was attempted, but in conventional terms, and if these localized, repeating sounds did come from the sky, there's nothing to it but a new variety of attempted explanations, and in most unconventional terms. There are recorded definite

impressions that the sounds were in the sky: Prof. Peleseneer's *positivement aérien*. In *Ciel et Terre*, 17-14, M. Van den Broeck announced that General Hennequin, of Brussels, had co-operated with him, and had sent enquiries to army officers and other persons, receiving thirty replies. Some of these correspondents had heard detonations at regular intervals. It is said that the sounds were like cannonading, but not in one instance were the sounds traced to terrestrial gunfire.

Jan. 24, 1896—a triplet of triplets—between 2:30 and 3:30, P.M.— by M. Overloop, of Middelkirke, Belgium—three series of detonations, each of three sounds.

The sounds went on, but, after this occurrence, there seems to me to be little inducement to me to continue upon the subject. This is indication that from somewhere there has been signaling: from extra-mundane vessels to one another, or from some unknown region to this earth, as nearly final as we can hope to find. There are persons who will see nothing but a susceptibility to the mysticism of numbers in a feeling that there is significance in threes of threes. But, if there be attempt in some other world to attract attention upon this earth, it would have to be addressed to some kind of a state of mind that would feel significances. Let our three threes be as mystic as the eleven horns on Daniel's fourth animal; if throughout nature like human nature there be only superstition as to such serialization, that superstition, for want of something more nearly intelligent, would be a susceptibility to which to appeal, and from which response might be expected. I think that a sense of mystic significance in the number three may be universal, because upon this earth it is general, appearing in theologies, in the balanced compositions of all the arts, in logical demonstrations, and in the indefinite feelings that are supposed to be superstitious.

The sounds went on, as if there were experiments, or attempts to communicate by means of other regularizations and repetitions. Feb. 18, 1896—a series of more than 20 detonations, at intervals of 2 or 3 minutes, heard at Ostend, by M. Pulzeys, an engineer of Brussels. Four or five sounds were heard at Ostend by someone else: repeated upon the 21st of February. Heard by M. Overloop, at Ostend, April 6: detonations at 11:57:30 A.M., and at 12:1:32 P.M. Heard the next day, by M. Overloop, at Blankenberghe, at 2:35 and 2:51 P.M.

The last occurrence recorded by M. Van den Broeck was upon the English Channel, May 23, 1896: detonations at 3:20 and 3:40 P.M. I have no more data, as to this period, myself, but I have notes upon similar sounds, by no means so widely reported and commented upon, in France and Belgium about 15 years later. One notices that the old earthquake-explanation as to these sounds has not appeared.

But there were other phenomena in England, in this period, and to considerable degree they were conventionally explained. They were not of the type of the Belgian phenomena, and, because manifestations were seen and felt, as well as heard, they were explained in terms of meteors and earthquakes. But in this double explanation, we meet a divided opposition, and no longer are we held back by the uncompromising attempt by exclusionist science to attribute all disturbances of this earth's surface to a subterranean origin. The admission by Symons and Fordham that we have recorded, as to occurrences of 1887-89, has survived.

The earliest of the accounts that I have read of the quakes in the general region of Worcester and Hereford (London Triangle) that associated with appearances in the sky, was published by two church wardens in the year 1661, as to occurrences of October, 1661, and is entitled, *A True and Perfect Relation of the Terrible Earthquake*. It is said that monstrous flaming things were seen in the sky, and that phenomena below were interesting. We are told, "truly and perfectly," that Mrs. Margaret Petmore fell in labor and brought forth three male offsprings all of whom had teeth and spoke at birth. Inasmuch as it is not recorded what the infants said, and whether in plain English or not, it is not so much an extraordinary birth such as, in one way or another, occurs from time to time, that affronts our conventional notions, as it is the idea that there could be relation between the abnormal in obstetrics and the unusual in terrestrics. The conventional scientist has just this reluctance toward considering shocks of this earth and phenomena in the sky at the same time. If he could accept with us that there often has been relation, the seeming discord would turn into a commonplace, but with us he would never again want to hear of extraordinary detonating meteors exploding only by coincidence over a part of this earth where an earthquake was occurring, or of concussions of this earth, time after time, in one small region, from meteors that, only by coincidence, happened to explode in one little local sky, time after time.

Give up the idea that this earth moves, however, and coincidences many times repeated do not have to be lugged in.

Our subject now is the supposed earthquake centering around Worcester and Hereford, Dec. 17, 1896; but there may have been related events, leading up to this climax, signifying long duration of something in the sky that occasionally manifested relatively to this corner of the London Triangle. Mrs. Margaret Petmore was too sensational a person for our liking, at least in our colder and more nearly scientific moments, so we shall not date so far back as the time of her performance; but the so-called earthquakes of Oct. 6, 1863, and of Oct. 30, 1868, were in this region, and we had data for thinking that they were said to be earthquakes only because they could not be traced to terrestrial explosions.

At 5:45 P.M., Nov. 2, 1893, a loud sound was heard at a place ten miles northeast of Worcester, and no shock was felt (*Nature,* 49-245); however at Worcester and in various parts of the west of England and in Wales a shock was felt.

According to James G. Wood, writing in *Symons' Met. Mag.,* 29-8, at 9:30 P.M., Jan. 25, 1894, at Llanthomas and Clifford, towns less than 20 miles west of Hereford, a brilliant light was seen in the sky, an explosion was heard, and a quake was felt. Half an hour later, something else occurred: according to Denning (*Nature,* 49-325) it was in several places, near Hereford and Worcester, supposed to be an earthquake. But, at Stokesay Vicarage, Shropshire (*Symons' Met. Mag.,* 29-8) was seen the same kind of an appearance as that which had been seen at Llanthomas and Clifford, half an hour before: an illumination so brilliant that for half a minute everything was almost as visible as by daylight.

In the *English Mechanic,* 74-155, David Packer calls attention to "a strange meteoric light" that was seen in the sky, at Worcester, during the quake of Dec. 17, 1896. I should say that this was the severest shock felt in the British Isles, in the 19th century, with the exception of the shock of April 22, 1884, in the eastern point of the London Triangle. There was something in the sky. In *Nature,* 55-179, J. Lloyd Bozward writes that, at Worcester, a great light was seen in the sky, at the time of the shock, and that, in another town, "a great blaze" had been seen in the sky. In *Symons' Met. Mag.,* 31-180, are recorded many observations upon lights that were seen in the sky. In an appendix to his book, *The Hereford Earthquake of 1896,* Dr. Charles Davison says that at the time of the quake (5:30 A.M.)

there was a luminous object in the sky, and that it “traversed a large part of the disturbed area.” He says that it was a meteor, and an extraordinary meteor that lighted up the ground so that one could have picked up a pin. With the data so far considered, almost anyone would think that of course an object had exploded in the sky, shaking the earth underneath. Dr. Davison does not say this. He says that the meteor only happened to appear over a part of this earth where an earthquake was occurring, “by a strange coincidence.”

Suppose that, with ordinary common sense, he had not lugged in his “strange coincidence,” and had written that of course the shock was concussion from an explosion in the sky—

Shocks that had been felt before midnight, December 17, and at 1:30 or 1:45, 2, 3, 3:30, 4, 5, and 5:20, and then others at 5:40 or 5:45 and at 6:15 o’clock—and were they, too, concussions, but fainter and from remoter explosions in the sky—and why not, if of course the great shock of 5:30 o’clock was from a great explosion in the sky—and by what multiplication of strangeness of coincidence could detonating meteors, or explosions of any other kind, so localize in the one little sky of Worcester, if this earth be a moving earth—and how could their origin be otherwise than a fixed region nearby?

In some minds it may be questionable that the earth could be so affected as it was at 5:30 A.M., Dec. 17, 1896, by an explosion in the sky. Upon Feb. 10, 1896, a tremendous explosion occurred in the sky of Madrid: throughout the city windows were smashed; a wall in the building occupied by the American Legation was thrown down. The people of Madrid rushed to the streets, and there was a panic in which many were injured. For five hours and a half a luminous cloud of debris hung over Madrid, and stones fell from the sky.

Suppose, just at present, we disregard all the Worcester-Hereford phenomena except those of Dec. 17, 1896. Draw a diagram, illustrating a stream of meteors pursuing this earth, now supposed to be rotating and revolving, for more than 400,000 miles in its orbit, and curving around gracefully and unerringly after the rotating earth, so as to explode precisely in this one little local sky and nowhere else. But we can’t think very reasonably even of a flock of birds flying after and so precisely pecking one spot on an apple thrown in the air by somebody. Another diagram—

stationary earth—bombardment of any kind one chooses to think of—same point hit every time—thinkable.

The phenomena associate with an opposition of Mars. Dec. 10, 1896—opposition of Mars.

But we have gone on rather elaborately with perhaps an insufficiency to base upon. We cannot say, directly, that all the phenomena of the night of Dec. 16-17, 1896, were shocks from explosions in the sky: only during the greatest of the concussions was something seen, or was something near enough to be seen.

We apply the idea of the diagrams to another series of occurrences in this period. Now draw a diagram relatively to the sky of Florida, and see just what the explanation of coincidence demands or exacts. But then consider the diagram as one of an earth that does not move and of something that is fixed over a point upon its surface. Things can be thought of as coming down from somewhere else to one special sky of this earth, as logically as precariously placed objects on one special window sill sometimes come down to a special neighbor.

In the *Monthly Weather Review*, 23-57, is a report, by the Director of the Florida Weather Service, upon “mysterious sounds” and luminous effects in the sky of Florida. According to investigation, these phenomena did occur in the sky of Florida, about noon, Feb. 7, 1895, again at 5 o’clock in the morning of the 8th, and again between 6 and 10 o’clock, night of the 8th. The Editor of the *Review* thinks that three meteors may have exploded so in succession in the sky of Florida, and nowhere else, “by coincidence.”

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CHAR me the trunk of a redwood tree. Give me pages of white chalk cliffs to write upon. Magnify me thousands of times, and replace my trifling immodesties with a titanic megalomania—then might I write largely enough for our subjects. Because of accessibility and abundance of data, our accounts deal very much with the relatively insignficant phenomena of Great Britain. But our subject, if not so restricted, would be the violences that have screamed from the heavens, lapping up villages with tongues of fire. If, because of appearances in the sky, it be accepted that some of the so-called earthquakes of Italy and South America represented relations with regions beyond this earth, then it is accepted that some of this earth's greatest catastrophes have been relations with the unknown and the external. We have data that seem to be indications of signaling, but not unless we can think that foreign giants have hurled explosive mountains at this earth can we see such indications in all the data.

Our data do seem to fall into two orders of phenomena: sounds of Melida, Barisal, and Belgium, and nothing falling from the sky, and nothing seen in the sky, and excellently supported observations for accepting a signal-like intent in intervals and grouping of sounds, at least in Barisal and Belgium; and the unregularized phenomena of Worcester-Hereford, Colchester, Comrie, and Birmingham, in which appearances are seen in the sky, or in which substances fall from the sky, and in which effects upon this earth, not noted at all in Belgium and Bengal, are great, and sometimes tremendous. It seems that extra-geography divides into the extra-sociologic and the extra-physical; and in the second type of phenomena, we suppose the data are of physical relations between this earth and other worlds. We think of a difference of potential. There were tremendous detonations in the sky at the times of the falls of the little black stones of Birmingham and Wolverhampton, and the electric manifestations, according to descriptions in the newspapers, were extraordinary, and great volumes of water fell. Consequently the events were supposed to be thunderstorms. I suppose, myself, that they were electric storms, but electric storms that represented

difference of potential between this earth and some region that was fixed, at least eleven years, over Birmingham and Wolverhampton, bringing down stones and volumes of water from some other world, or bringing down stones, and dislodging intervening volumes of water, such as we have many data for thinking exist in outer space, sometimes in bodies of warm or hot water, and sometimes as great masses, or fields. of ice.

Let two objects be generically similar, but specifically different and a relation that may be known as a difference of potential, though that term is usually confined to electric relations, generates between them. Quite as the Gulf Stream—though there are no reasons to suppose that there is such a Gulf Stream as one reads of—represents a relation between bodies of water heated differently, given any two worlds, alike in general constitution, but differing, say, electrically, and given proximity, we conceive of relations between them other than gravitational.

But this cloistered earth, and its monkish science—shrinking from, denying, or disregarding, all data of external relations, except some one controlling force that was once upon a time known as Jehovah, but that has been re-named Gravitation—

That the electric exchanges that were recognized by the ancients, but that were anthropomorphically explained by them, have poured from the sky and have gushed to the sky, afferently and efferently, between this earth and the nearby planets, or between this mainland and its San Salvadors, and have been recognized by the moderns, or the neo-ancients, but have been meteorologically and seismologically misconstrued by them.

When a village spouts to the sky, it is said to have been caught up in a cyclone: when unknown substances fall from the sky, not much of anything is said upon the subject.

Lost tribes and the nations that have disappeared from the face of this earth—that the skies have reeked with terrestrial civilizations, spreading out in celestial stagnations, where their remains to this day may be. The Mayans—and what became of them? Bones of the Mayans, picked white as frost by space-scavengers, regioned to this day in a sterile luxuriance somewhere, spread upon existence like the pseudo-breath of Death, crystallized on a sky-pane. Three times gaps wide and dark the history of Egypt—and that these abysses were gulfed by disappearances—that some of the eliminations from this earth may have been upward translations in functional suctions. We conceive of Supervision upon this earth’s development, but for it the

names of Jehovah and Allah seem old-fashioned—that the equivalence of wrath, but like the storms of cells that, in an embryonic thing, invade and destroy cartilage-cells, when they have outlived their usefulness, have devastated this earth's undesirables. Likely enough, or not quite likely enough, one of these earlier Egypts was populated by sphinxes, if one can suppose that some of the statuary still extant in Egypt were portraitures. This is good, though also not so good, orthodox Evolutionary doctrine—that between types occur transitionals—

That Elimination and Redistribution swept an earlier Egypt with suctions—because it was written, in symbols of embryonic law, that life upon this earth must form onward—and the crouching sphinx on the sands of Egypt, blinking the mysticism of her morphologic mixtures, would perhaps detain forever the less interesting type that was advancing—

That often has Clarification destroyed transitionals, that they shall not hold back development.

One conceives of their remains, to this day, wafting still in the currents of the sky: floating avenues of frozen sphinxes, solemnly dipping in cosmic undulations, down which circulate processions of Egyptian mummies.

An astronomer upon this earth notes that things in parallel lines have crossed the sun.

We offer this contribution as comparing favorably with the works of any other historian. We think that some of the details may need revision, but that what they typify is somewhere nearly acceptable.

Latitudes and longitudes of bones, not in the sky, but upon the surface of this earth. Baron Toll and other explorers have, upon the surface of this earth, kicked their way through networks of ribs and protrusions of skulls and stacks of vertebræ, as numerous as if from dead land they had sprouted there. Anybody who has read of these tracts of bones upon the northern coast of Siberia, and of some of the outlying islands that are virtually composed of bones cemented with icy sand, will agree with me that there have been cataclysms of which conventionality and standardization tell us nothing. Once upon a time, some unknown force translated, from somewhere, a million animals to Colorado, where their remains now form great bone-quarries. Very largely do we express a reaction against dogmatism, and sometimes we are not dogmatic, ourselves. We don't know very positively whether at times the animal life of some other world has been swept away from that world, eventually pouring from the sky of

Siberia and of Colorado, in some of the shockingest floods of mammoths from which spattered cats and rabbits, in cosmic scenery, or not. All that we can say is that when we turn to conventionality it is to blankness or suppression. Every now and then, to this day, occurs an alleged fall of blood from the sky, and I have notes upon at least one instance in which the microscopically examined substance was identified as blood. But now we conceive of intenser times, when every now and then a red cataract hung in the heavens like the bridal veil of the goddess of murder. But the science of today is a soporific like the idealism of Europe before the War broke out. Science and idealism—wings of a vampire that lulls consciousness that might otherwise foresee catastrophe. Showers of frogs and showers of fishes that occur to this day—that they are the dwindled representatives to this day of the cataclysms of intenser times when the skies of this earth were darkened by afferent clouds of dinosaurs. We conceive of intenser times, but we conceive of all times as being rhythmic times. We are too busy to take up alarmism, but, if Rome, for instance, never was destroyed by terrestrial barbarians, if we cannot very well think of Apaches seizing Chicago, extra-mundane vandals may often have swooped down upon this earth, and they may swoop again; and it may be a comfort to us, some day, to mention in our last gasp that we told about this.

History, geology, palæontology, astronomy, meteorology—that nothing short of cataclysmic thinking can break down these united walls of Exclusionism.

Unknown monsters sometimes appear in the ocean. When, upon the closed system of normal preoccupations, a story of a sea serpent appears, it is inhospitably treated. To us of the wider cordialities, it has recommendations for kinder reception. I think that we shall be noted in recognitions of good works for our bizarre charities. Far back in the topography of the nineteenth century, Richard Proctor was almost submerged in an ocean of smugness, but now and then he was a little island emerging from the gently alternating doubts and satisfactions of his era, and by means of several papers upon the “sea serpent” he so protruded and gave variety to a dreary uniformity. Proctor reviewed some of the stories of “sea serpents.” He accepted some of them. This will be news to some conventionalists. But the mystery that he could not solve is their conceivable origin. To be sure this earth may not be round, or top-shaped, and may tower away somewhere, perhaps with the great Antarctic plateau

as its foothills, to a gigantic existence commensurate throughout with the sea monsters that sometimes reach regions known to us. Judging by our experience in other fields of research, we suspect that this earth never has been traversed except in conventional trade-routes and standard explorations. One supposes that enormous forms of life that have appeared upon the surface of the ocean, did not come from conditions of great pressure below the surface. If there be no habitat of their own, in unknown seas of this earth, the monsters fell from the sky, surviving for a while. In his day, Charles Lyell never said a more preposterous thing than this—however, we have no idea that mere preposterousness is a criterion.

Then at times the things have fallen upon land, presumably. To scientific minds in their present anæmia of malnutrition, we offer new nourishment. There are materials for a science of neo-palæontology—as it were—at least a new view of animal-remains upon this earth. Remains of monsters, supposed to have lived geologic ages ago, are sometimes found, not in ancient deposits, but upon, or near, the surface of the ground, sometimes barely covered. I have notes upon a great pile of bones, supposed to be the remains of a whale, out in open view in a western desert.

In the American Museum of Natural History, New York City, is the mummified body of a monster called a *trachodon,* found in Converse County, Wyoming. It was not found upon the surface of the ground, which is bad for our attempts to stimulate palæontology. But the striking datum to me is that the only other huge mummy that I know of is another *trachodon,* now in the Museum of Frankfort. If only extraordinarily would geologic processes mummify remains of a huge animal, doubly extraordinarily would two animals of the same species be *so* exclusively affected. One at least gives some consideration to the idea that these *trachodons* are not products of geologic circumstances, but were affected, in common, by other circumstances. By inspiration, or progressive deterioration, one then conceives of the things as having wafted and dried in space, finally falling to this earth. Our swooping vandals are relieved with showering mummies. Life is turning out to be interesting.

Organic substances like life-fluids of living things have rained from the sky. However, it is enough for our general purposes to make acceptable simply that unknown substances have, in large quantities, fallen from the sky. That is neo-ism enough, it seems to me. I consider, myself, all such data relatively to this earth's stationariness or possible motions. In *Ciel et*

Terre, 22-198, it is said that, about 2 P.M., June 8, 1901, a glue-like substance fell at Sart. The story is told by an investigator, M. Michael, a meteorologist. He says that he saw this substance falling from the sky, but does not give an estimate of duration: he says that he arrived during the last five minutes of the shower. Editors and extra-geographers can't help trying to explain. The Editor of *Ciel et Terre* writes that, three days before, there had been, at Antwerp, a great fire, in which, among other substances, a large quantity of sugar had been burned. He asks whether there could be any connection. Antwerp is about 80 miles from Sart.

Sept. 2, 1905—the tragedy of the space-pig:

In the *English Mechanic*, 86-100, Col. Markwick writes that, according to the *Cambrian Natural Observer*, something was seen in the sky, at Llangollen, Wales, Sept. 2, 1905. It is described as an intensely black object, about two miles above the earth's surface, moving at the rate of about twenty miles an hour. Col. Markwick writes: "Could it have been a balloon?" We give Col. Markwick good rating as an extra-geographer, but of the early, or differentiating type, a transitional, if not a sphinx: so he was not quite developed enough to publish the details of this object. In the *Cambrian Natural Observer*, 1905-35—the journal of the Astronomical Society of Wales—it is said that, according to accounts in the newspapers, an object had appeared in the sky, at Llangollen, Wales, Sept. 2, 1905. At the schoolhouse, in Vroncysylite —I think that's it: with all my credulity, some of these Welsh names look incredible to me, in my notes—the thing in the sky had been examined through powerful field glasses. We are told that it had short wings, and flew, or moved, in a way described as "casually inclining sideways." It seemed to have four legs, and looked to be about ten feet long. According to several witnesses it looked like a huge, winged pig, with webbed feet. "Much speculation was rife as to what the mysterious object could be."

Five days later, according to a member of the Astronomical Society of Wales—see *Cambrian Observer*, 1905-30—a purple-red substance fell from the sky, at Llanelly, Wales.

I don't know that my own attitude toward these data is understood, and I don't know that it matters in the least; also from time to time my own attitude changes: but very largely my feeling is that not much can be, or should be, concluded from our meager accounts, but that so often are these occurrences, in our fields, reported, that several times every year there will

be occurrences that one would like to have investigated by someone who believes that we have written nothing but bosh, and by someone who believes in our data almost religiously. It may be that, early in February, 1892, a luminous thing traveled back and forth, exploring for ten hours in the sky of Sweden. The story is copied from a newspaper, and ridiculed, in the *English Mechanic*, 55-34. Upon March 7, 1893, a luminous object shaped like an elongated pear was seen in the sky of Val-de-la-Haye, by M. Raimond Coulon (L*'Astro.,* 1893-169). M. Coulon's suggestion is that the light may have been a signal suspended from a balloon. The signal-idea is interesting.

In the summer of 1897, several weeks after Prof. Andrée and his two companions had sailed in a balloon, from Amsterdam Island, Spitzbergen, it was reported that a balloon had been seen in British Columbia. There was wide publicity: the report was investigated. It may be that had a terrestrial balloon escaped from somewhere in the United States or Canada, or if there had been a balloon-ascension at this time, the circumstances would have been reported: it may well be that the object was not Andree's balloon. President Bell, of the National Geographic Society, heard of this object, and heard that details had been sent to the Swedish Foreign Office, and cabled to the American Minister, at Stockholm, for information. He publishes his account in the *National Geographic Magazine,* 9-102. He was referred to the Swedish Consul, at San Francisco. In reply to inquiry, the Consul telegraphed the following data, which had been collected by the President of the Geographical Society of the Pacific:

"Statement of a balloon passing over the Horse-Fly Hydraulic Mining Camp, in Caribou, British Columbia, 52°, 20′, and Longitude 120°, 30′—

"From letters of J. B. Robson, manager of the Caribou Mining Co., and of Mrs. Wm. Sullivan, the blacksmith's wife, there, and a statement of Mr. John J. Newsome, San Francisco, then at camp. About 2 or 3 o'clock, in the afternoon, between fourth and seventh of August last, weather calm and cloudless, Mrs. Sullivan, while looking over the Hydraulic Bank, noticed a round, grayish-looking object in the sky, to the right of the sun. As she watched, it grew larger and was descending. She saw the larger mass of the balloon above, and a smaller mass apparently suspended from the larger. It continued to descend, until she plainly recognized it as a balloon and a large basket hanging thereto. It finally commenced to swing violently back and forth, and move very fast toward the eastward and northward. Mrs. Sullivan

called her daughter, aged 18, and about this time Mrs. Robson and her daughter were observing it."

If someone saw a strange fish in the ocean, we'd like to know— what was it like? Stripes on him—spots—what? It would be unsatisfactory to be told over and over only that a dark body had crossed some waves. In *Cosmos*, n.s., 39-356, a satisfactory correspondent writes that, at Lille, France, Sept. 4, 1898, he saw a red object in the sky. It was like the planet Mars, but was in the position of no known planet. He looked through his telescope, and saw a rectangular object, with a violent-colored band on one side of it, and the rest of it striped with black and red. He watched it ten minutes, during which time it was stationary; then, like the object that was seen at the time of the Powell-mystery, it cast out sparks and disappeared.

In the *English Mechanic*, 75-417, Col. Markwick writes that, upon May 10, 1902, a friend of his had seen in the sky, in South Devon, a great number of highly colored objects like little suns or toy-balloons. "Altogether beats me," says Col. Markwick.

Upon March 2, 1899, a luminous object in the sky, from 10 A.M., until 4 P.M., was reported from El Paso, Texas. Mentioned in the *Observatory*, 22-247—supposed to have been Venus, even though Venus was then two months past secondary maximum brilliance. This seems reasonable enough, in itself, but there are other data for thinking that an unknown, luminous body was at this time in the especial sky of the southwestern states. In the *U. S. Weather Bureau Report (Ariz. Sec.*, March, 1899) it is said that, at Prescott, Arizona, Dr. Warren E. Day had seen a luminous object, upon the 8th of March, "that traveled with the moon" all day, until 2 P.M. It is said that, the day before, this object had been seen close to the moon, by Mr. G. O. Scott, at Tonto, Arizona. Dr. Day and Mr. Scott were voluntary observers for the *Weather Review.* This association with the moon and this localization of observation are puzzling.

La Nature (Sup.) Nov. 11, 1899—that at Luzarches, France, upon the 28th of October, 1899, M. A. Garrie had seen, at 4:50 P.M., a round, luminous object rising above the horizon. About the size of the moon. He watched it for 15 minutes, as it moved away, diminishing to a point. It may be that something from external regions was for several weeks in the especial sky of France. In *La Nature (Sup.)* Dec. 16, 1899, someone writes that he had seen, Nov. 15, 1899, 7 P.M., at Dourite (Dordogne) an object like an enormous star, at times white, then red, and sometimes blue, but moving

like a kite. It was in the south. He had never seen it before. Someone, in the issue of December 30th, says that without doubt it was the star Formalhaut, and asks for precise position. Issue of Jan. 20,1900—the first correspondent says that the object was in the southwest, about 35 degrees above the horizon, but moving so that the precise position could not be stated. The kite-like motion may have been merely seeming motion—object may have been Formalhaut, though 35 degrees above the horizon seems to me to be too high for Formalhaut—but, then, like the astronomers, I'm likely at times to expose what I don't know about astronomy. Formalhaut is not an enormous star. Seventeen are larger.

May 1, 1908, between 8 and 9 P.M., at Vittel, France—an object, with a nebulosity around it, diameter equal to the moon's, according to a correspondent to *Cosmos*, n.s., 58-535. At 9 o'clock a black band appeared upon the object, and moved obliquely across it, then disappearing. The Editor thinks that the object was the planet Venus, under extraordinary meteorologic conditions.

Dark obj., by Prof. Brooks, July 21, 1896 (*Eng. Mec.*, 64-12); dark obj., by Gathmann, Aug. 22, 1896 (*Sci. Amer. Sup.*, 67-363); two luminous objs., by Prof. Swift, evidently in a local sky of California, because unseen elsewhere in California, Sept. 20, and one of them again, Sept. 21, 1896 (*Astro. Jour.* 17-8, 103); "Waldemath's second moon," Feb. 5, 1898 (*Eng. Mec.*, 67-545); unknown obj., March 30, 1908 (*Observatory*, 31-215); dark obj., Nov. 10, 1908 (*Bull. Soc. Astro. de France*, 23-74).

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COLD HARBOR, Hanover Co., Virginia—two men in a field —"an apparently clear sky." In the *Monthly Weather Review*, 28-29, it is said that upon Aug. 7, 1900, two men were struck by lightning. The Editor says that the weather map gave no indication of a thunderstorm, nor of rain, in this region at the time.

In July, 1904, a man was killed on the summit of Mt. San Gorgionio, near the Mojave desert. It is said that he was killed by lightning. Two days later, upon the summit of Mt. Whitney, 180 miles away, another man was killed "by lightning" (*Ciel et Terre*, 29-120).

It is said, in *Ciel et Terre*, 17-42, that, in the year 1893, nineteen soldiers were marching near Bourges, France, when they were struck by an unknown force. It is said that in known terms there is no explanation. Some of the men were killed, and others were struck insensible. At the inquest it was testified that there had been no storm, and that nothing had been heard.

If there occur upon the surface of this earth pounces from blankness and seizures by nothings, and "sniping" with bullets of unfindable substance, we nevertheless hesitate to bring witchcraft and demonology into our fields. Our general subject now is the existence of a great deal that may be nearby, or temporarily nearby, ordinarily invisible, but occasionally revealed by special circumstances. A background of stars is not to be compared, in our data, with the sun for a background, as a means of revelations. We accept that there are sunspots, but we gather from general experience and special instances that the word "sunspot" is another of the standardizing terms like "auroral" and "meteoric" and "earthquakes." See Webb's *Celestial Objects* for some observations upon large definite obscurations called "sunspots" but which were as evanescent against the sun as would be islands and jungles of space, if intervening only a few moments between this earth and the swifting moving sun. According to Webb, astronomers have looked at great obscurations upon the sun, have turned away, and then looked again, finding no trace of the phenomena. Eclipses are special circumstances, and rather often have large, unknown bulks been revealed by different light-

effects during eclipses. For instance, upon Jan. 22, 1898, Lieut. Blackett, R.N., assisting Sir Norman Lockyer, at Viziadrug, India, during the total eclipse of the sun, saw an unknown body between Venus and Mars (*Jour. Leeds Astro. Soc.*, 1906-23). We have had other instances, and I have notes upon still more. The photographic plate is a special condition, or sensitiveness. In *Knowledge*, 16-234, a correspondent writes that, in August, 1893, in Switzerland, moonlighted night, he had exposed a photographic plate for one hour. Upon the photograph, when developed, were seen irregular, bright markings, but there had been no lightning to this correspondent's perceptions.

The details of the sheep-panic of Nov. 3, 1888, are extraordinary. The region affected was much greater than was supposed by the writer whom we quoted in an earlier chapter. It is said in another account in *Symons' Meteorological Magazine*, that, in a tract of land twenty-five miles long and eight miles wide, thousands of sheep had, by a simultaneous impulse, burst from their bounds; and had been found the next morning, widely scattered, some of them still panting with terror under hedges, and many crowded into corners of fields. See London *Times*, Nov. 20, 1888. An idea of the great number of flocks affected is given by one correspondent who says that malicious mischief was out of the question, because a thousand men could not have frightened and released all these sheep. Someone else tries to explain that, given an alarm in one flock, it might spread to the others. But all the sheep so burst from their folds at about eight o'clock in the evening, and one supposes that many folds were far from contiguous, and one thinks of such contagion requiring considerable time to spread over 200 square miles. Something of an alarming nature and of a pronounced degree occurred somewhere near Reading, Berkshire, upon this evening. Also there seems to be something of special localization: the next year another panic occurred in Berkshire not far from Reading.

I have a datum that looks very much like the revelation of a ghost-moon, though I think of it myself in physical terms of light-effects. In *Country Queries and Notes*, 1-138, 417, it is said that, in the sky of Gosport, Hampshire, night of Sept. 14, 1908, was seen a light that came as if from an unseen moon. It may be that I can here record that there was a moon-like object in the sky of the Midlands and the south of England, this night, and that, though to human eyesight, this world, island of space, whatever it may have been, was invisible, it was, nevertheless, revealed. Upon this evening

of Sept. 14, 1908, David Packer, then in Northfield, Worcestershire, saw a luminous appearance that he supposed was auroral, and photographed it. When the photograph was developed, it was seen that the "auroral" light came from a large, moon-like object. A reproduction of the photograph is published in the *English Mechanic,* 88-211. It shows an object as bright and as well-defined as the conventionally accepted moon, but only to the camera had it revealed itself, and Mr. Packer had caught upon a film a space-island that had been invisible to his eyes. It seems so, anyway.

In *Country Queries and Notes,* 1-328, it is said that, upon Aug. 2, 1908, at Ballyconneely, Connemara coast of Ireland, was seen a phantom city of different-sized houses, in different styles of architecture; visible three hours. It is said that no doubt the appearance was a mirage of some city far away —far away, but upon this earth, of course. This apparition is not of the type that we consider so especially of our own data. The so-called mirages that so especially interest us are interesting to us not in themselves, but in that they belong to the one order of phenomena or evidence that unifies so many fields of our data: that is, repetitions in a local sky, signifying the fixed position of something relatively to a small part of this earth's surface. We cannot think that mirages, terrestrial or extra-terrestrial, could so repeat. But if in a local sky of this earth there be a fixed region, perhaps not a city, but something of rugged and featureful outlines, with projections that might look architectural, reflections from it, shadows, or Brocken specters repeating always in one special sky are thinkable except by the Chinese-minded who regard all our data as "foreign devils." The writer in *Country Queries and Notes* says—"Circumstantial accounts have even been published of the city of Bristol being distinctly recognized in a mirage seen occasionally in North America." If we shall accept that anywhere in North America repeated representations of the same city or city-like scene have appeared in the same local sky, I prefer, myself, a foreign devil of a thought, and its significance, whether hellish or not, that this earth is stationary, to such a domestic vagrant of a thought as the idea that mirage could so pick out the city of Bristol, or any other city, over and over, and also invariably pick out for its screen the same local sky, thousands of miles, or five miles, away.

In the *English Mechanic,* Sept. 10, 1897, a correspondent to the *Weekly Times and Echo* is quoted. He had just returned from the Yukon. Early in June, 1897, he had seen a city pictured in the sky of Alaska. "Not one of us

could form the remotest idea in what part of the world this settlement could be. Some guessed Toronto, others Montreal, and one of us even suggested Pekin. But whether this city exists in some unknown world on the other side of the North Pole, or not, it is a fact that this wonderful mirage occurs from time to time yearly, and we were not the only ones who witnessed the spectacle. Therefore it is evident that it must be the reflection of some place built by the hand of man." According to this correspondent, the "mirage" did not look like one of the cities named, but like "some immense city of the past."

In the *New York Tribune,* Feb. 17, 1901, it is said that Indians of Alaska had told of an occasional appearance, as if of a city, suspended in the sky, and that a prospector, named Willoughby, having heard the stories, had investigated, in the year 1887, and had seen the spectacle. It is said that, having several times attempted to photograph the scene, Willoughby did finally at least show an alleged photograph of an aerial city. In *Alaska,* p. 140, Miner Bruce says that Willoughby, one of the early pioneers in Alaska, after whom Willoughby Island is named, had told him of the phenomenon, and that, early in 1899, he had accompanied Willoughby to the place over which the mirage was said to repeat. It seems that he saw nothing himself, but he quotes a member of the Duc d'Abruzzi's expedition to Mt. St. Elias, summer of 1897, Mr. C. W. Thornton, of Seattle, who saw the spectacle, and wrote—"It required no effort of the imagination to liken it to a city, but was so distinct that it required, instead, faith to believe that it was not in reality a city." Bruce publishes a reproduction of Willoughby's photograph, and says that the city was identified as Bristol, England. So definite, or so un-mirage-like, is this reproduction, trees and many buildings shown in detail, that one supposes that the original was a photograph of a good-sized terrestrial city, perhaps Bristol, England.

In Chapter 10, of his book, *Wonders of Alaska,* Alexander Badlam tries to explain. He publishes a reproduction of Willoughby's photograph: it is the same as Bruce's, except that all buildings are transposed, or are negative in positions. Badlam does not like to accuse Willoughby of fraud: his idea is that some unknown humorist had sold Willoughby a dry plate, picturing part of the city of Bristol. My own idea is that something of this kind did occur, and that this photograph, greatly involved in accounts of the repeating mirages, had nothing to do with the mirages. Badlam then tells of another photograph. He tells that two men, near the Muir Glacier, had, by

means of a pan of quicksilver, seen a reflection of an unknown city somewhere, and that their idea was that it was at the bottom of the sea near the glacier, reflecting in the sky, and reflecting back to and from the quicksilver. That's complicated. A photographer named Taber then announced that he had photographed this scene, as reflected in a pan of quicksilver. Badlam publishes a reproduction of Taber's photograph, or alleged photograph. This time, for anybody who prefers to think that there is, somewhere in the sky of Alaska, a great, unknown city, we have a most agreeable photograph: exotic-looking city; a structure like a coliseum, and another prominent building like a mosque, and many indefinite, mirage-like buildings. I'd like to think this photograph genuine, myself, but I do conceive that Taber could have taken it by photographing a panorama that he had painted. Badlam's explanation is that mirages of glaciers are common, in Alaska, and that they look architectural. Some years ago, I read five or six hundred pounds of literature upon the Arctic, and I should say that far-projected mirages are not common in the Arctic: mere looming is common. Badlam publishes a photograph of a mirage of Muir Glacier. The looming points of ice do look Gothic, but they are obviously only loomings, extending only short distances from primaries, with no detachment from primaries, and not reflecting in the sky.

For the first identification of the Willoughby photograph as a photograph of part of the city of Bristol, see the *New York Times,* Oct. 20, 1889. That this photograph was somebody's hoax seems to be acceptable. But it was not similar to the frequently reported scene in the sky of Alaska, according to descriptions. In the *New York Times,* Oct. 31, 1889, is an account, by Mr. L. B. French, of Chicago, of the spectral representation, as he saw it, near Mt. Fair-weather. "We could see plainly houses, well-defined streets, and trees. Here and there rose tall spires over huge buildings, which appeared to be ancient mosques or cathedrals. . . . It did not look like a modern city—more like an ancient European City."

Jour. Roy. Met. Soc., 27-158:

That every year, between June 21 and July 10, a "phantom city" appears in the sky, over a glacier in Alaska; that features of it had been recognized as buildings in the city of Bristol, England, so that the "mirage" was supposed to be a mirage of Bristol. It is said that for generations these repeating representations had been known to the Alaskan Indians, and that, in May, 1901, a scientific expedition from San Francisco would investigate.

It is said that, except for slight changes, from year to year, the scene was always the same.

La Nature, 1901-1-303:

That a number of scientists had set out from Victoria, B. C., to Mt. Fairweather, Alaska, to study a repeating mirage of a city in the sky, which had been reported by the Duc d'Abruzzi, who had seen it and had sketched it.

32

NIGHT of Dec 7, 1900—for seventy minutes a fountain of light played upon the planet Mars. Prof. Pickering—"absolutely inexplicable" (*Sci. Amer.,* 84-179).

It may have been a geyser of messages. It may be translated some day. If it were expressed in imagery befitting the salutation by a planet to its dominant, it may be known some day as the most heroic oration in the literature of this geo-system. See Lowell's account in *Popular Astronomy,* 10-187. Here are published several of the values in a possible code of long flashes and short flashes. Lowell takes a supposed normality for unity, and records variations of two thirds, one and one third, and one and a half. If there be, at Flagstaff, Arizona, records of all the long flashes and short flashes that were seen, for seventy minutes, upon this night of Dec. 7, 1900, it is either that the greetings of an island of space have been hopelessly addressed to a continental stolidity, or there will have to be the descent, upon Flagstaff, Arizona, by all the amateur Champollions of this earth, to concentrate in one deafening buzz of attempted translation.

It was at this time that Tesla announced that he had received, upon his wireless apparatus, vibrations that he attributed to the Martians. They were series of triplets.

. . . . . .

It is our expression that, during eclipses and oppositions and other notable celestial events, lunarians try to communicate with this earth, having a notion that at such times the astronomers of this earth may be more nearly alert.

An eclipse of the moon, March 10-11, 1895—not a cloud; no mist — electric flashes like lightning, reported from a ship upon the Atlantic (*Eng. Mec.*, 61-100).

During the eclipse of the sun, July 29, 1897, a strange image was taken on a sensitive plate, by Mr. L. E. Martindale, of St. Mary's, Ohio. It looks like a record of knotted lightning. See *Photography,* May 26, 1898.

In the *Bull. Soc. Astro. de France*, 17-205, 315, 447, it is said that upon the first and the third of March, 1903, a light like a little star, flashing intermittently, was seen by M. Rey, in Marseilles, and by Maurice Gheury, in London, in the lunar crater Aristarchus. March 28, 1903—opposition of Mars.

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In *Cosmos*, n.s., 49-259, M. Desmoulins writes, from Argenteuil, that, upon Aug. 9, 1903, at 11 P.M., moving from north to south, he saw a luminous object. The planet Venus was at primary greatest brilliance upon Aug. 13, 1903. In three respects it was like other objects that have been observed upon this earth at times of the nearest approach of Venus: it was a red object; it appeared only in a local sky, and it appeared in the time of the visibility of Venus. With M. Desmoulins were four persons, one of whom had field glasses. The object was watched twenty minutes, during which time it traveled a distance estimated at five or six kilometers. It looked like a light suspended from a balloon, but, through glasses, no outline of a balloon could be seen, and there were no reflections of light as if from the opaque body of a balloon. It was a red body, with greatest luminosity in its nucleus. The Editor of *Cosmos* writes that, according to other correspondents, this object had been seen, at 11 P.M., July 19th and 26th, at Chatou. Argenteuil and Chatou are 4 or 5 miles apart, and both are about 5 miles from Paris. All three of these dates were Sundays, and even though nothing like a balloon had been seen through glasses, one naturally supposes that somebody near Paris had been amusing himself sending up fire-balloons, Sunday evenings. The one great resistance to all that is known as progress is what one "naturally supposes."

In the *English Mechanic*, 81-220, Arthur Mee writes that several persons, in the neighborhood of Cardiff, had, upon the night of March 29, 1905, seen in the sky, "an appearance like a vertical beam of light, which was not due (they say) to a searchlight, or any such cause." There were other observations, and they remind us of the observations by Noble and Bradgate, Aug. 28-29, 1883: then upon an object that cast a light like a searchlight; this time an association between a light like a searchlight, and a luminosity of definite form. In the *Cambrian Natural Observer*, 1905-32, are several accounts of a more definite-looking appearance that was seen, this night, in the sky of Wales—"like a long cluster of stars, obscured by a thin film or mist." It was seen at the time of the visibility of Venus, then an

“evening star”—about 10 P.M. It grew brighter, and for about half an hour looked like an incandescent light. It was a conspicuous and definite object, according to another description—”like an iron bar, heated to an orange-colored glow, and suspended vertically.”

Three nights later, something appeared in the sky of Cherbourg, France—*L’Astre Cherbourg*—the thing that appeared, night after night, in the sky of the city of Cherbourg, at a time when the planet Venus was nearest (inferior conjunction April 26, 1905).

Flammarion, in the *Bull. Soc. Astro. de France*, 19-243, says that this object was the planet Venus. He therefore denies that it had moved in various directions, saying that the supposed observations to this effect were illusions. In *L’Illustration*, April 22, 1905, he tells the story in his own way, and says some things that we are not disposed to agree with, but also he says that the ignorance of some persons in *inénarrable*. In *Cosmos*, n.s., 42-420, months after the occurrence, it is said that many correspondents had written to inquire as to *L’Astre Cherbourg*. The Editor gives his opinion that the object was either Jupiter or Venus. Throughout our Venus-visitor expression, the most important point is appearance in a local sky. That unifies this expression with other expressions, all of them converging into our general extra-geographic acceptances. The Editor of *Cosmos* says that this object, which was reported from Cherbourg, was reported from other towns as well. He probably means to say that it was seen simultaneously in different towns. For all guardians of this earth’s isolation, this is a convenient thing to say: the conclusion then is that the planet Venus, exceptionally bright, was attracting unusual attention generally, and that there was nothing in the especial sky of Cherbourg. But we have learned that standardizing disguisements often obscure our data in later accounts, and we have formed the habit of going to contemporaneous sources. We shall find that the newspapers of the time reported a luminous object that appeared, night after night, only over the city of Cherbourg, as the name by which it was known indicates. It was a reddish object. The Editor of *Cosmos* explains that atmospheric conditions could give this coloration to Venus. I suppose this could be so occasionally: not night after night, I should say. We shall find that this object, or a similar object, was reported from other places, but not simultaneously with its appearance over Cherbourg.

In the *Journal des Debats,* the first news is in the issue of April 4, 1905. It is said that a luminous body was appearing, every evening, between 8 and 10 o'clock, over the city of Cherbourg.

These were about the hours of the visibility of Venus. In this period, Venus set at 9:30 P.M., and Jupiter at 8 P.M. It is enough to make any conventionalist feel most reasonable, though he'd feel that way anyway, in thinking that of course then this object was Venus. In my own earlier speculations upon this subject, this one datum stood out so that had it not been for other data, I'd have abandoned the subject. But then I read of other occurrences: time after time has something been seen in a local sky of this earth, sometimes so definitely seen to move, not like Venus, but in various directions, that one has to think that it was not Venus, though appearing at the time of visibility of Venus. Between these appearances and visibility of Venus there does seem to be relation.

In the *Journal,* it is said that *L'Astre Cherbourg* had an apparent diameter of 15 centimeters, and a less definite margin of 75 centimeters—seemed to be about a yard wide—meaningless of course. In the *Bull. Soc. Astro. de France,* it is said that, according to reports, its form was oval. In the *Journal des Debats,* we are told that at first the thing was supposed to be a captive balloon but that this idea was given up because it appeared and disappeared.

Journal des Debats, April 12:

That every evening the luminous object was continuing to appear above Cherbourg; that many explanations had been thought of: by some persons that it was the planet Jupiter, and by others that it was a comet but that no one knew what it was. The cornet-explanation is of course ruled out. The writer in the *Journal* expresses regret that neither the Meteorological Bureau nor the Observatory of Paris had sent anybody to investigate, but says that the *préfet maritime* of Cherbourg had commissioned a naval officer to investigate. In *Le Temps,* of the 12th, is published an interview with Flammarion, who complains some more against general *inénarrableness,* and says that of course the object was Venus. The writer in *Le Temps* says that soon would the matter be settled, because the commander of a warship had undertaken to decide what the luminous body was.

Le Figaro, April 13:

The report of Commander de Kerillis, of the *Chasseloup-Laubut*— that the position of *L'Astre Cherbourg* was not the position of Venus, and that

the disc did not look like the crescentic disc of Venus, but that the observations had been made from a vessel, under unfavorable conditions, and that the commander and his colleagues did not offer a final opinion.

I think that there was *inénarrable-ness* all around. Given visibility, I can't think what the unfavorable conditions could have been. Given, however, observations upon something that all the astronomers in the world would say could not be, one does think of the dislike of a naval officer, who, though he probably knew right ascension from declination, was himself no astronomer, to commit himself. In *Le Temps*, and other newspapers published in Paris, it is said that, according to the naval officers, the object might have been a comet, but that they would not positively commit themselves to this opinion, either.

I think that somebody should be brave; so, though not positively, of course, I incline, myself, to relate these appearances over Cherbourg with the observations in Wales, upon March 29th; also I suggest that there is another report that may relate. In *Le Temps*, April 12, it is said that, at midnight, April 9-10, a luminous body, like L'*Astre Cherbourg*, was seen in the sky of Tunis. Though it was visible several minutes, it is said that this object was probably a meteor.

Every night, from the first to the eleventh of April, a luminous body appeared in the sky of Cherbourg. Then it was seen no longer. It may have been seen sailing away, upon its final departure from the sky of Cherbourg. In *Le Figaro*, April 15, it is said that, upon the night of the eleventh of April, the guards of La Blanche Light-house had seen something like a lighted balloon in the sky. Supposing it was a balloon, they had started to signal to it, but it had disappeared. It is said that the lighthouse had been out of communication with the mainland, and that the guards had not heard of *L'Astre Cherbourg.*

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In the London *Times*, Nov. 23, 1905, a correspondent writes that, at East Liss, Hants, which is about 40 miles from Reading, he and his gamekeeper had, about 3:30 P.M., Nov. 17th, heard a loud, distant rumbling. According to this hearer, the rumbling seemed to be a composition of triplets of sounds. We shall accept that three sounds were heard, but we have no other assertion that each sound was itself so sub-serialized. This correspondent's gamekeeper said that he had heard similar sounds at 11:30 A.M., and at 1:30 P.M. It is said that the sounds were not like gunfire, and that the direction

from which they seemed to come, and the time in the afternoon, precluded the explanation of artillery-practice at Aldershot or Portsmouth. Aldershot is about 15 miles from East Liss, and Portsmouth about 20.

Times, November 24—that the "quake" had been distinctly felt in Reading, about 3:30 P.M., November 17th. *Times*, November 25— heard at Reading, at 11:30, 1:30, and 3:30 o'clock, November 17th.

Reading Standard, November 25:

That consternation had been caused in Reading, upon the 17th, by sounds and vibrations of the earth, about 11:30 A.M., 1:30 P.M., and 3:30 P.M. It is said that nothing had been seen, but that the sounds closely resembled those that had been heard during the meteoric shower of 1866.

Mr. H. G. Fordham appears again. In the *Times*, December 1, he writes that the phenomena pointed clearly to an explosion in the sky, and not to an earthquake of subterranean origin. "The noise and shock experienced are no doubt attributable to the explosion (or to more than one explosion) of a meteorite, or bolide, high up in the atmosphere, and setting up a wave (or waves) of sound and aerial shock. It is probable, indeed, that a good many phenomena having this source are wrongly ascribed to slight and local earthshock."

Mr. Fordham wrote this, but he wrote no more, and I think that somewhere else something else was written, and that, in the year 1905, it had to be obeyed; and that it may be interpreted in these words—"Thou shalt not." Mr. Fordham did not inquire into the reasonableness of thinking that, only by coincidence, meteors so successively exploded, in a period of four hours, in one local sky of this earth, and nowhere else; and into the inference, then, as to whether this earth is stationary or not.

We have data of a succession occupying far more than four hours.

In the *Times*, Mrs. Lane, of Petersfield, 20 miles from Portsmouth, writes that, at 11:30 A.M., and at 3:30 P.M., several days before the 17th, she had heard the detonations, then hearing them again, upon the 17th. Mrs. Lane thinks that there must have been artillery-practice at Portsmouth. It seems clear that there was no cannonading anywhere in England, at this time. It seems clear that there was signaling from some other world.

In the *English Mechanic*, 82-433, Joseph Clark writes that, a few minutes past 3 P.M., upon the 18th a triplet of detonations was heard at Somerset —"as loud as thunder, but not exactly like thunder."

Reading Observer, November 25—that, according to a correspondent, the sounds had been heard again, at Whitechurch (20 miles from Reading) upon the 21st, at 1:35 P.M., and 3:08 P.M. The sounds had been attributed to artillery-practice at Aldershot, but the correspondent had written to the artillery commandant, at Bulford Camp, and had received word that there had been no heavy firing at the times of his inquiry. The Editor of the *Observer* says that he, too, had written to the commandant, and had received the same answer.

I have searched widely. I have found record of nobody's supposition that he had traced these detonations to origin upon this earth.

33

IN Coconino County, Arizona, is an extraordinary formation. It is known as Coon Butte and as Crater Mountain. Once upon a time, something gouged this part of Arizona. The cavity in the ground is about 3,800 feet in diameter, and it is approximately 600 feet deep, from the rim of the ramparts to the floor of the interior. Out from this cavity had been hurled blocks of limestone, some of them a mile or so away, some of these masses weighing probably 5,000 tons each. And in the formation, and around it, have been found either extraordinary numbers of meteorites, or fragments of one super-meteorite. Barringer, in his report to the Academy of Natural Science of Philadelphia (*Proceedings, A.N.S.* P., December, 1905) says that, of the traffickers in this meteoritic material, he knew of two men who had shipped away fifteen tons of it. But Bar-ringer's minimum estimate of a body large enough so to gouge the ground is ten million tons.

It was supposed that a main mass of meteoritic material was buried under the floor of the formation, but this floor was drilled, and nothing was found to support this supposition. One drill went down 1,020 feet, going through 100 feet of red sandstone, which seems to be the natural, undisturbed substructure. The datum that opposes most strongly the idea that this pit was gouged by one super-meteorite is that in it and around it at least three kinds of meteorites have been found: they are irons, masses of iron-shale, and shale-balls that are so rounded and individualized that they cannot be thought of as fragments of a greater body, and cannot be very well thought of as great drops of molten matter cast from a main, incandescent mass, inasmuch as there is not a trace of igneous rock such as would mark such contact.

There are data for thinking that these three kinds of objects fell at different times, presumably from origin of fixed position relatively to this point in Arizona. Within the formation, shales were found, buried at various distances, as if they had fallen at different times, for instance seven of them in a vertical line, the deepest-buried 27 feet down; also shales outside the formation were found buried. But, quite as if they had fallen more recently,

the hundreds of irons were found upon the surface of the ground, or partly covered, or wholly covered, but only with superficial soil.

There is no knowing when this great gouge occurred, but cedars upon the rim are said to be about 700 years old.

In terms of our general expression upon differences of potential, and of electric relations between nearby worlds, I think of a blast between this earth and a land somewhere else, and of something that was more than a cyclone that gouged this pit.

Other meteorites have been found in Arizona: the 85-pound iron that was found at Weaver, near Wickenburg, 130 miles from Crater Mountain, in 1898, and the 960-pound mass, now in the National Museum, said to have been found at Peach Springs, 140 miles from Crater Mountain. These two irons indicate nothing in particular; but, if we accept that somewhere else in Arizona there is another deposit of meteorites, also extraordinarily abundant, such abundance gives something of commonness of nature if not of commonness of origin to two deposits. There are several large irons known as the Tucson meteorites, one weighing 632 pounds and another 1,514 pounds, now in museums. They came from a place known as Iron Valley, in the Santa Rita Mountains, about 30 miles south of Tucson, and about 200 miles from Crater Mountain. Iron Valley was so named because of the great number of meteorites found in it. According to the people of Tucson, this fall occurred about the year 1660. See *Amer. Jour. Sci.,* 2-13-290.

Upon June 24, 1905, Barringer found, upon the plain, about a mile and a half northwest of Crater Mountain, a meteorite of a fourth kind. It was a meteoritic stone, “as different from all the other specimens as one specimen could be from another.” Barringer thinks that it fell, about the 15th of January, 1904. Upon a night in the middle of January, 1904, two of his employees were awakened by a loud hissing sound, and saw a meteor falling north of the formation. At the same time, two Arizona physicians, north of the formation, saw the meteor falling south of them. For analysis and description of this object, see *Amer. Jour. Sci.,* 4-21-353. Barringer, who believes that once upon a time one super-meteorite, of which only a very small part has ever been found, gouged this hole in the ground, writes —”That a small stony meteorite should have fallen on almost exactly the same spot on this earth’s surface as the great Canon Diablo iron meteorite fell many centuries ago, is certainly a most remarkable coincidence. I have

stated the facts as accurately as possible, and I have no opinion to offer, as to whether or not these involve anything more than a coincidence."

Other phenomena in Arizona:

Upon Feb. 24, 1897, a great explosion was heard over the town of Tombstone. It is said that a fragment of a meteor fell at St. David (*Monthly Weather Review,* 1897-56). Yarnell, Arizona, Sept. 12, 1898—"a loud, deep, thundering noise" that was heard between noon and 1 P.M. "The noise proceeded from the Granite Range, this side of Prescott. From all accounts, a large meteor struck the earth at this time" (*U. S. Weather Bureau Rept., Ariz. Section*, September, 1898).

Upon July 19, 1912, at Holbrook, Arizona, about 50 miles from Crater Mountain, occurred a loud detonation and one of the most remarkable falls of stones recorded. See *Amer. Jour. Sci.,* 4-34-437. Some of the stones are very small. About 14,000 were collected. Only twice, since the year 1800, have stones in greater numbers fallen from the sky to this earth, according to conventional records.

About a month later (August 18) there was another concussion at Holbrook. This was said to be an earthquake (*Bull. Seis. Soc. Amer.,* 1-209).

34

THE climacteric opposition of Mars, of 1909—the last in our records—the next will be in 1924—

Aug. 8, 1909—see *Quar. Jour. Met. Soc.*, n.s., 35-299— flashes in a clear sky that were seen in Epsom, Surrey, and other places in the southeast of England. They could not be attributed to lightning in England. The writer in the *Journal* finds that there was a storm in France, more than one hundred miles away. For an account of these flashes, tabulated at Epsom—"night fine and star-light"—see *Symons' Met. Mag.*, 44-148. During each period of five minutes, from 10 to 11:15 P.M., the number of flashes—16-14-20-31-15-26-12-20-30-18-27-22-14-12-10-21-8-5-3-1-0-1-0. With such a time-basis, I can see no possibility of detecting anything of a code-like significance. I do see development. There were similar observations at times in the favorable oppositions of Mars of 1875 and 1877. In 1892, such flashes were noted more particularly. Now we have them noted and tabulated, but upon a basis that could be of interest only to meteorologists. If they shall be seen in 1924, we may have observation, tabulation, and some marvelously different translations of them. After that there will be some intolerably similar translations, suspiciously delayed in publication.

Sept. 23, 1909—opposition of Mars.

Throughout our data, we have noticed successions of appearances in local skies of this earth, that indicate that this earth is stationary, but that also relate to nearest approaches of Mars. Upon the night of Dec. 16-17, 1896, concussion after concussion was felt at Worcester, England; a great "meteor" was seen at the time of the greatest concussion. Mars was seven days past opposition. We thought it likely enough that explosion after explosion had occurred over Worcester, and that something in the sky had been seen only at the time of the greatest, or the nearest, explosion. We did not think well of the conventional explanation that only by coincidence had a great meteor exploded over a region where a series of earthquakes was occurring, and exactly at the moment of the greatest of these shocks.

In November, 1911, Mars was completing its cycle of changing proximities of a duration of fifteen years, and was duplicating the relationship of the year 1896. About 10 o'clock, night of Nov. 16, 1911, a concussion that is conventionally said to have been an earthquake occurred in Germany and Switzerland. But plainly there was an explosion in the sky. In the *Bulletin of the Seismological Society of America*, 3-189, Count Montessus de Ballore writes that he had examined 112 reports upon flashes and other luminous appearances in the sky that had preceded the "earthquake" by a few seconds. He concludes that a great meteor had only happened to explode over a region where, a few seconds later, there was going to be an earthquake. "It therefore seems highly probable that the earthquake coincided with a fall of meteors or of shooting stars."

The duplication of the circumstances of December, 1896, continues. If of course this concussion in Germany and Switzerland was the effect of something that exploded in the sky—of what were the concussions that were felt later, the effects? De Ballore does not mention anything that occurred later. But, a few minutes past midnight, and then again, at 3 o'clock, morning of the 17th, there were other, but slighter, shocks. Only at the time of the greatest shock was something seen in the sky. *Nature*, 88-117—that this succession of phenomena did occur. We relate the phenomena to the planet Mars, but also we ask—how, if most reasonably, all three of these shocks were concussions from explosions in the sky, if of course one of them was, meteors could ever so hound one small region upon a moving earth, or projectiles be fired with such specialization and preciseness? Nov. 17th, 1911, was seven days before the opposition of Mars. Though the opposition occurred upon the 24th of November, Mars was at minimum distance upon the 17th.

No matter how difficult of acceptance our own notions may be, they are opposed by this barbarism, or puerility, or pill that can't be digested:

Seven days from the opposition of Mars, in 1896, a great meteor exploded over a region where there had been a succession of earth-quakes —by coincidence;

Seven days from the next similar opposition of Mars, a great meteor exploded over a region where there was going to be a succession of earthquakes—by coincidence.

. . . . . .

The Advantagerians of the moon—that is the cult of lunar communicationists, who try to take advantage of such celestial events as oppositions and eclipses, thinking that astronomers, or night watchmen, or policemen of this earth might at such times look up at the sky—

A great luminous object, or a meteor, that was seen at the time of the eclipse of June 28, 1908—"as if to make the date of the eclipse more memorable," says W. F. Denning (*Observatory,* 31-288).

Not long before the opposition of Mars, in 1909, the bright spot west of Picard was seen twice: March 26 and May 23 (*Jour. B. A. A.*, 19-376).

Nov. 16, 1910—an eclipse of the moon, and a "meteor" that appeared, almost at the moment of totality (*Eng. Mec.*, 92-430). It is reported, in *Nature,* 85-118, as seen by Madame de Robeck, at Naas, Ireland, "from an apparent radiant, just below the eclipsed moon." The thing may have come from the moon. Seemingly with the same origin, it was seen far away in France. In *La Nature,* Nov. 26, 1910, it is said that, at Besancon, France, during the eclipse, was seen a meteor like a superb rocket, "qui serait partie de la lune." There may have been something occurring upon the moon at the time. In the *Jour. B. A. A.*, 21-100, it is said that Mrs. Albright had seen a luminous point upon the moon throughout the eclipse.

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Our expression is that there is an association between reported objects, like extra-mundane visitors, and nearest approaches by the planet Venus to this earth. Perhaps unfortunately this is our expression, because it makes for more restriction than we intend. The objects, or the voyagers, have often been seen during the few hours of the visibility of Venus, when the planet is nearest. "Then such an object is Venus," say the astronomers. If anybody wonders why, if these seeming navigators can come close to this earth—as they do approach, if they appear only in a local sky—they do not then come all the way to this earth, let him ask a sea captain why said captain never purposely descends to the bottom of the ocean, though traveling often not far away. However, I conceive of a great variety of extra-mundanians, and I am now collecting data for a future expression—that some kinds of beings from outer space can adapt to our conditions, which may be like the bottom of a sea, and have been seen, but have been supposed to be psychic phenomena.

Upon Oct. 31, 1908, the planet Venus was four months past inferior conjunction, and so had moved far from nearest approach, but there are

vague stories of strange objects that had been seen in the skies of this earth —localized in New England—back to the time of nearest approach. In the *New York Sun,* Nov. 1, 1908, is published a dispatch, from Boston, dated Oct. 31. It is said that, near Bridgewater, at four o'clock in the morning of October 31, two men had seen a spectacle in the sky. The men were not astronomers. They were undertakers. There may be a disposition to think that these observers were not in their own field of greatest expertness, and to think that we are not very exacting as to the sources of our data. But we have to depend upon undertakers, for instance: early in our investigations, we learned that the prestige of astronomers has been built upon their high moral character, all of them most excellently going to bed soon after sunset, so as to get up early and write all day upon astronomical subjects. But the exemplary in one respect may not lead to much advancement in some other respect. Our undertakers saw, in the sky, something like a searchlight. It played down upon this earth, as if directed by an investigator, and then it flashed upward. "All of the balloons in which ascensions are made, in this State, were accounted for today, and a search through southeastern Massachusetts failed to reveal any further trace of the supposed airship." It is said that "mysterious bright lights," believed to have come from a balloon, had been reported from many places in New England. The week before, persons at Ware had said that they had seen an illuminated balloon passing over the town, early in the morning. During the summer such reports had come from Bristol, Conn., and later from Pittsfield, Mass., and from White River Junction, Vt. "In all these cases, however, no balloon could be found, all the known airships being accounted for." In the *New York Sun,* Dec. 13, 1909, it is said that, during the autumn of 1908, reports had come from different places in Connecticut, upon a mysterious light that moved rapidly in the sky.

Venus moved on, traveling around the sun, which was revolving around this earth, or traveling any way to suit anybody. In December, 1909, the planet was again approaching this earth. So close was Venus to this earth that, upon the 15th of December, 1909, crowds stood, at noon, in the streets of Rome, watching it, or her (*New York Sun,* December 16). At 3 o'clock, afternoon of December 24th crowds stood in the streets of New York, watching Venus (*New York Tribune,* December 25). One supposes that upon these occasions Venus may have been within several thousand miles of this earth. At any rate I have never heard of one fairly good reason for

supposing otherwise. If again something appeared in local skies of this earth, or in the skies of New England, and sometimes during the few hours of the visibility of Venus, the object was or was not Venus, all according to the details of various descriptions, and the credibility of the details. The searchlight, for instance; more than one light; directions and motions. Venus, at the time, was for several hours after sunset, slowly descending in the southwest: primary maximum brilliance Jan. 8th, 1910; inferior conjunction February 12th.

There is an amusing befuddlement to clear away first. Upon the night of Sept. 8, 1909, a luminous object had been seen sailing over New England, and sounds from it, like sounds from a motor, had been heard. Then Mr. Wallace Tillinghast, of Worcester, Mass., announced that this light had been a lamp in his "secret aeroplane," and that upon this night he had traveled, in said "secret aeroplane," from Boston to New York, and back to Boston. At this time the longest recorded flight, in an aeroplane, was Farman's, of 111 miles, from Rheims, August, 1909; and, in the United States, according to records, it was not until May 29, 1910, that Curtiss flew from Albany to New York City, making one stop in the 150 miles, however. So this unrecorded flight made some stir in the newspapers. Mr. Tillinghast meant his story humorously of course. I mention it because, if anybody should look the matter up, he will find the yarn involved in the newspaper accounts. If nothing else had been seen, Mr. Tillinghast might still tell his story, and explain why he never did anything with his astonishing "secret aeroplane"; but something else was seen, and upon one of the nights in which it appeared, Tillinghast was known to be in his home.

According to the *New York Tribune,* Dec. 21, 1909, Immigration Inspector Hoe, of Boston, had reported having seen, at one o'clock in the morning of December 20, "a bright light passing over the harbor" and had concluded that he had seen an airship of some kind.

New York Tribune, December 23—that a "mysterious airship" had appeared over the town of Worcester, Mass., "sweeping the heavens with a searchlight of tremendous power." It had come from the southeast, and traveled northwest, then hovering over the city, disappearing in the direction of Marlboro. Two hours later, it returned. "Thousands thronged the streets, watching the mysterious visitor." Again it hovered, then moving away, heading first to the south and then to the east.

The next night, something was seen, at 6 o'clock, at Boston. "The searchlights shot across the sky line." "As it flew away to the north, queries began to pour into the newspaper offices and the police stations, regarding the remarkable visitation." It is said that an hour and a half later, an object that was supposed to be an airship with a powerful searchlight, appeared in the sky, at Willimantic, Conn., "hovering" over the town about 15 minutes. In the *New York Sun,* December 24, are more details. It is said that, at Willimantic, had been seen a large searchlight, approaching from the east, and that then dark outlines of something behind the searchlight had been seen. Also, in the *Sun,* it is said that whatever it may have been that was seen at Boston, it was a dark object, with several red lights and a searchlight, approaching Boston from the west, hovering for 10 minutes, and then moving away westward. From Lynn, Mass., it was described as "a long black object," moving in the direction of Salem, and then returning, "at a high speed." It is said that the object had been seen at Marlboro, Mass., nine times since December 14.

New York Tribune, Jan. 1, 1910—dispatch from Huntington, West Virginia, Dec. 31, 1909—"Three huge lights of almost uniform dimensions appeared in the early morning sky, in this neighborhood, today. Joseph Green, a farmer, declared that they were meteors, which fell on his farm. An extensive search of his land by others who saw the lights was fruitless, and many persons believe that an airship had sped over the country."

In the *Tribune,* Jan. 13, 1910, it is said that, at 9 o'clock, morning of January 12, an airship had been seen at Chattanooga, Tenn. "Thousands saw the craft, and heard the 'chug' of its engine." Later the object was reported from Huntsville, Alabama. *New York Tribune,* January 15—dispatch from Chattanooga, January 14 —"For the third successive day, a mysterious white aircraft passed over Chattanooga, about noon today. It came from the north, and was traveling southeast, disappearing over Missionary Ridge. On Wednesday, it came south, and on Thursday, it returned north."

In the middle of December, 1909, someone had won a prize for sailing in a dirigible from St. Cyr to the Eiffel Tower and back.

St. Cyr is several miles from Paris.

Huntsville, Ala., and Chattanooga, Tenn., are 75 miles apart.

An association between the planet Venus and "mysterious visitors" either illumines or haunts our data. In the *New York Tribune,* Jan. 29, 1910, it is

said that a luminous object, thought to be Winnecke's comet, had been seen, January 28, near Venus; reported from the Manila Observatory.

I have another datum that perhaps belongs to this series of events. Every night, from the 14th to the 23rd of December, 1909, if we accept the account from Marlboro, a luminous object was seen traveling, or exploring, in the sky of New England. Certainly enough it was no "secret airship" of this earth, unless its navigator went to extremes with the notion that the best way to kept a secret is to announce it with red lights and a searchlight. However, our acceptance depends upon general data as to the development of terrestrial aeronautics. But upon the night of December 24th, the object was not seen in New England, and it may have been traveling or exploring somewhere else. Night of the 24th—Venus in the southwest in the early hours of the evening. In the *English Mechanic*, 104-71, a correspondent, who signs himself "Rigel," writes that, upon December 24, at 8:30 o'clock in the evening, he saw a luminous object appear above the northeastern horizon and slowly move southward, until 8.50 o'clock, then turning around, retracing, and disappearing whence it came, at two minutes past nine. The correspondent is James Fergusen, Rossbrien, Limerick, Ireland. He writes frequently upon astronomical and meteorological subjects, and is still contributing to the somewhat enlightened columns of the *English Mechanic.*

. . . . . .

Nov. 19, 1912—explosive sounds reported from Sunninghill, Berkshire. No earthquake was recorded at the Kew Observatory, and, in the opinion of W. F. Denning (*Nature*, 9-363, 417) the explosion was in the sky. It was a terrific explosion, according to the *Westminster Gazette* (November 19). There was either one great explosion that rumbled and echoed for five minutes, or there were repeated detonations, resembling cannonading —"like a tremendous discharge of big guns" according to reports from Abingdon, Lewes, and Epsom. Sunninghill is about ten miles from Reading, and Abingdon is near Reading, but the sound was heard in London, and down by the English Channel, and even in the island of Alderney. In the *Gazette*, November 28, Sir George Fordham (H. G. Fordham) writes that, in his opinion, it was an explosion in the sky. He says —"The phenomena of airshock never have, I believe, been very fully investigated." His admissions and his omissions remain the same as they have been since occurrences of the year 1889. He does not mention that,

according to Philip T. Kenway, of Hambledon, near Godalming, about thirty miles southeast of Reading, the sounds were heard again the next day, from 1:45 to 2 P.M. Mr. Kenway thinks that there had been big-gun firing at Portsmouth (*West. Gaz.*, November 21). In the London *Standard*, a correspondent, writing from Dorking, say that the phenomena of the 19th were like concussions from cannonading—"at regular intervals"—"at quick intervals, lasting some seconds each time, for five minutes, by the clock."

It develops that Reading was the center over which the detonations occurred. In the *Westminster Gazette*, November 30, it is said that the shocks had been felt in Reading, upon the 19th, 20th, and 21st. Only from Reading have I record of phenomena upon the 21 st. Mr. H. L. Hawkins, Lecturer in Geology, of the Reading University, writes that according to his investigations there had been no gun-firing in England, to which the detonations could be attributed. He says that Fordham's explanation was in accord with his own investigations, or that the detonations had occurred in the sky. He writes that, inasmuch as the detonations had occurred upon three successive days, a shower of meteors, of long duration, would have to be supposed. How he ever visualized that unerring shower, striking one point over this earth's surface, and nowhere else, day after day, if this earth be a rotating and revolving body, I cannot see. If he should say that by coincidence this repetition could occur, then by what coincidence of coincidences could the same repetitions have occurred in this same local sky, centering around Reading, seven years before? The indications are that this earth is stationary, no matter how unreasonable that may sound.

In the *Westminster Gazette*, December 9, W. F. Denning writes that without doubt the phenomena were "meteoric explosions." But he alludes to the "airquake and strange noises" that were heard upon the 19th. He does not mention the detonations that were heard upon the following days. Not one of these writers mentions the sounds that were heard in Reading, in November, 1905.

London *Standard*, Nov. 23, 1912—that, according to Lieut. Col. Trewman, of Reading, the sounds had been heard at Reading, at 9 A.M., upon the 19th; 1:45 P.M., the 20th; 3:30 P.M., the 21st.

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"UNKNOWN Aircraft Over Dover." According to the Dover correspondent to the London *Times* (Jan. 6, 1913) something had been seen, over Dover, heading from the sea.

In the London *Standard,* Jan. 24, 1913, it is said that, upon the morning of January 4, an unknown airship had been seen, over Dover, and that, about the same time, the lights of an airship had been seen over the Bristol Channel. These places are several hundred miles apart.

London *Times,* January 21—report by Capt. Lindsay, Chief Constable of Glamorganshire: that, about five o'clock, in the afternoon of January 17, he saw an object in the sky of Cardiff, Wales. He says that he called the attention of a bystander, who agreed with him that it was a large object. "It was much larger than the Willows airship, and left in its trail a dense smoke. It disappeared quickly."

The next day, according to the *Times,* there were other reports: people in Cardiff saw something that was lighted or that carried lights, moving rapidly in the sky. In the *Times,* of the 28th, it is said that an airship that carried a brilliant light had been seen in Liverpool. "It is stated at the Liverpool Aviation School that none of the airmen had been out on Saturday night." Dispatches from town after town—a traveling thing in the sky, carrying a light, and also a searchlight that swept the ground. It is said that a vessel, of which the outlines had been clearly seen, had appeared in the sky of Cardiff, Newport, Neath, and other places in Wales. In the *Standard,* January 31, is published a list of cities where the object had been seen. Here a writer tries to conclude that some foreign airship had made half a dozen visits to England and Wales, or had come once, remaining three weeks; but he gives up the attempt, thinking that nothing could have reached England and have sailed away half a dozen times without being seen to cross the coast; thinking that the idea of anything having made one journey, and remaining three weeks in the air deserved no consideration.

If the unknown object did carry something like a searchlight, an idea of its powers is given in an account in the *Cardiff Evening Express,* Jan. 25,

1913—“Last evening brilliant lights were seen, sweeping skyward, and now, this evening, the lights grow bolder. Streets and houses in the locality of Totterdown were suddenly illuminated by a brilliant, piercing light, which, sweeping upward, gave many spectators a fine view of the hills beyond.” In the *Express*, February 6, is a report upon this light like a searchlight, and the object that flashed it, by the police of Dulais Valley. Also there is an account, by a police sergeant, of a luminous thing that was for a while stationary in the sky, and then moved away.

Still does the conventional explanation, or suggestion, survive. It is said that members of the staff of the *Evening Express* had gone to the roof of the newspaper building, but had seen only the planet Venus, which was brilliant at this time.

Then writes a correspondent, to the *Express*, that the object could not have been Venus, because he had seen it traveling at a rate of 20 or 30 miles an hour, and had heard sounds from it. Someone else writes that not possibly could the thing be Venus: he had seen it as “a bright red light, going very fast.” Still someone else says that he had seen the seeming vessel upon the 5th of February, and that it had suddenly disappeared.

There is a hiatus. Between the 5th and the 21st of February, nothing like an airship was seen in the sky of England and Wales. If we can find that somewhere else something similar was seen in the sky, in this period, one supposes that it was the same object, exploring or maneuvering somewhere else. It seems however that there were several of these objects, because of simultaneous observations at places far apart. If we can find that, during the absence from England and Wales, similar objects were seen somewhere else, a great deal of what we try to think upon the subject will depend upon how far from Great Britain they were seen. It seems incredible that the planet Venus should deceive thousands of Britons, up to the 5th of February, and stop her deceptions abruptly upon that date, and then abruptly resume deceptions upon the 21st, in places at a distance apart. These circumstances oppose the idea of collective hallucinations, by which some writers in the newspapers tried to explain. If they were hallucinations, the hallucinations renewed collectively, upon the 21st, in towns one hundred miles apart. One extraordinary association is that all appearances, except the first, were in the hours of visibility of Venus, then an “evening star.”

Upon the night of the 21st, a luminous object was reported from towns in Yorkshire and from towns in Warwickshire, two regions about one hundred

miles apart; about 10 P.M. All former attempts to explain had been abandoned, and the general supposition was that Germain airships were maneuvering over England. But not a thing had been seen to cross the coast of England, though guards were patroling the coasts, especially commissioned to watch for foreign airships. Sailors in the North Sea, and people in Holland and Belgium had seen nothing that could be thought a German airship sailing to or from England. A writer in *Flight* takes up as especially mysterious the appearance far inland, in Warwickshire. Then came reports from Portsmouth, Ipswich, Hornsea, and Hull, but, one notes, no more, at this time, from Wales. Also in Ipswich, which is more than a hundred miles from the towns in Warwickshire, and more than a hundred miles from the Yorkshire towns, a luminous object was seen upon the night of the 21st. *Ipswich Evening Star,* February 25—something that carried a searchlight that had been seen upon the nights of the 21st and 24th, moving in various directions, and then "dashing off at lightning speed"—that, at Hunstanton, had been seen three bright lights traveling from the eastern sky, remaining in sight 30 minutes, stationary, or hovering over the town, and then disappearing in the northwest. *Portsmouth Evening News,* February 25—that soon after 8 P.M., evening of the 24th, had been seen a very bright light, appearing and disappearing, remaining over Portsmouth about one hour, and then moving away. Portsmouth and Ipswich are about 120 miles apart. In the London newspapers, it is said that, upon the evening of the 25th, crowds stood in the streets of Hull, watching something in the sky, "the lights of which were easily distinguishable." Hull is about 190 miles northeast of Portsmouth. *Hull Daily Mail,* February 26—that a crowd had watched a light high in the air. It is said that the light had been stationary for almost half an hour and had then shot away northward. In the *Times,* February 28, are published reports upon "the clear outlines of an airship, which was carrying a dazzling searchlight," from Portland, Burcleaves, St. Alban's Head, Papplewich, and the Orkneys. The last account, after a long interval, that I know of, is another report from Capt. Lindsay: that, about 9 o'clock, evening of April 8th, he and many other persons had seen, over Cardiff, something that carried a brilliant light and traveled at a rate of sixty or seventy miles an hour.

Upon April 24, 1913, the planet Venus was at inferior conjunction.

In the *Times,* February 28, it is said that a fire-balloon had been found in Yorkshire, and it is suggested that someone had been sending up fire-

balloons.

In the *Bull. Soc. Astro, de France,* 1913-178, it is said that the people of England were as credulous as the people of Cherbourg, and had permitted themselves to be deceived by the planet Venus.

If German airships were maneuvering over England, without being seen either approaching or departing, appearing sometimes far inland in England without being seen to cross the well-guarded coasts, it was secret maneuvering, inasmuch as the accusation was denied in Germany (*Times,* February 26 and 27). It was then one of the most brilliantly proclaimed of secrets, or it was concealment under one of the most powerful searchlights ever seen. Possibly an airship from Germany could appear over such a city as Hull, upon the east coast of England, without being seen to arrive or to depart, but so far from Germany is Portsmouth, for instance, that one does feel that something else will have to be thought of. The appearances over Liverpool and over towns in Wales might be attributed to German airships by someone who has not seen a map since he left school. There were more observations upon sudden appearances and disappearances than I have recorded: stationariness often occurred.

The objects were absent from the sky of Great Britain, from February 5 to February 21.

According to data published by Prof. Chant, in the *Journal of the Royal Astronomical Society of Canada,* 7-148, the most extraordinary procession in our records was seen, in the sky of Canada, upon the night of Feb. 9, 1913. Either groups of meteors, in one straight line, passed over the city of Toronto, or there was a procession of unknown objects, carrying lights. According to Prof. Chant, the spectacle was seen from the Saskatchewan to Bermuda, but if this long route was traversed, data do not so indidate. The supposed route was diagonally across New York State, from Buffalo, to a point near New York City, but from New York State are recorded no observations other than might have been upon ordinary meteors, this night. A succession of luminous objects passed over Toronto, night of Feb. 9, 1913, occupying from three to five minutes in passing, according to different estimates. If one will think that they were meteors, at least one will have to think that no such meteors had ever been seen before. In the *Journal,* 7-405, W. F. Denning writes that, though he had been watching the heavens since the year 1865, he had never seen anything like this. In most of the observations, the procession is described as a whole—”like an

express train, lighted at night"— "the lights were at different points, one in front, and a rear light, then a succession of lights in the tail." Almost all of the observations relate to the sky of Toronto and not far from Toronto. It is questionable that the same spectacle was seen in Bermuda, this night. The supposed long flight from the Saskatchewan to Bermuda might indicate something of a meteoric nature, but the meteor-explanation must take into consideration that these objects were so close to this earth that sounds from them were heard, and that, without succumbing to gravitation, they followed the curvature of this earth at a relatively low velocity that cannot compare with the velocity of ordinary meteors.

If now be accepted that again, the next day, objects were seen in the sky of Toronto, but objects unlighted, in the daytime—I suppose that to some minds will come the thought that this is extraordinary, and that almost immediately the whole subject will then be forgotten. Prof. Chant says that, according to the *Toronto Daily Star,* unknown objects, but dark objects this time, were seen at Toronto, in the afternoon of the next day—"not seen clearly enough to determine their nature, but they did not seem to be clouds or birds or smoke, and it was suggested that they were airships cruising over the city." *Toronto Daily Star,* February 10— "They passed from west to east, in three groups, and then returned west in more scattered formation, about seven or eight in all."

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AUGUST, 1914—this arena-like earth, with its horizon banking high into a Coliseum, when seen from not too far above —faint, rattling sounds of the opening of boundaries—tawny formations slinking into the arena—their crouchings and seizures and crunchings. Aug. 13, 1914—things that were gathering in the sky. They were seen by G. W. Atkins, of Elstree, Herts, and were seen again upon the 16th and the 17th (*Observatory*, 37-358). Sept. 9, 1914—a host in the sky; watched several hours by W. H. Steavenson (*Jour. B. A. A.*, 25-27). There were round appearances, but some of them were shaped like dumbbells. They were not seeds, snowflakes, insects, nor anything else that they "should" have been, according to Mr. Steavenson. He says that they were large bodies.

Oct. 10, 1914—a ship that was seen in the sky—or "an absolutely black, spindle-shaped object" crossing the sun. It was seen, at Manchester, by Albert Buss (*Eng. Mec.*, 100-236). "Its extraordinarily clear-cut outline was surrounded by a kind of halo, giving the impression of a ship, plowing her way through the sea, throwing up white-foamed waves with her prow."

Mikkelsen (*Lost in the Arctic*, p. 345):

"During the last few days (October, 1914) we have been much tumbled up and down in our minds, owing to a remarkable occurrence, somewhat in the nature of Robinson Crusoe's encounter with the footprints in the sand. Our advance load has been attacked—an empty petroleum cask is found, riddled with tiny holes, such as would be made by a charge of shot! Now a charge of shot is scarcely likely to materialize out of nowhere; one is accustomed to associate the phenomenon with the presence of human beings. It is none of our doing—then whose doing is it? We hit upon the wildest theories to account for it, as we sit in the tent, turning the mysterious object over and over. No beast of our acquaintance could make all those little round holes: what animal could even open its jaws so wide? And why should anybody take the trouble to make a target of our gear? Are there Eskimos about—Eskimos with guns? There are no footprints to be

seen: it could scarcely have been an animal—the whole thing is highly mysterious."

Jan. 31, 1915—a symbolic-looking formation upon the moon— six or seven white spots, in Littrow, arranged like the Greek letter *Gamma (Eng. Mec.,* 101-47).

Feb. 13, 1915—Steep Island, Chusan Archipelago—a lighthouse-keeper complained to Capt. W. F. Tyler, R.N., that a British warship had fired a projectile at the lighthouse. But no vessel had fired a shot, and it is said that the object must have been a meteor (*Nature,* 97-17).

In the middle of February, 1915, the planet Venus was about two months and a half past inferior conjunction. If objects like navigating constructions were seen in the sky, at this time, there may be an association, but I am turning against that association, feeling that it is harmful to our wider expression that extra-mundane vessels have been seen in the sky of this earth, and that they come from regions at present unknown. *New York Tribune,* Feb. 15, 1915—that, at 10 P.M., February 14, three aeroplanes had been seen to cross the St. Lawrence river, near Morristown, N. Y., according to reports, but that, in the opinion of the Dominion police, nothing but fire-balloons had been seen. It is said that two "responsible residents" had seen two of the objects cross the river, between 8 and 8:30 P.M., and then return five hours later. In the Canadian Parliament, Sir Wilfred Laurier had said that, at 9 P.M., he had been called up by the Mayor of Brockwell, telling him that three aeroplanes with "powerful searchlights" had crossed the St. Lawrence. The story is told in the *New York Herald.* Here it is said that, according to the Chief of Police, of Ogdensburg, N. Y., a farmer, living five miles from Ogdensburg, had reported having seen an aeroplane, upon the 12th. Then it is said that the mystery had been solved: that, while celebrating the one hundredth anniversary of peace between the United States and Canada, some young men of Morristown had sent up paper balloons, which had exploded in the sky, after 9 P.M., night of the 14th. *New York Times*—that the objects had been seen first at Guananoque, Ontario. Here it is said that the balloon-story is absurd. According to the Dominion Observatory, the wind was, at the time, blowing from the east, and the objects had traveled toward the northeast. It is said that one of the objects had, for several minutes, turned a powerful searchlight upon the town of Brockwell.

Upon Dec. 11, 1915, Bernard Thomas, of Glenorchy, Tasmania, saw a "particularly bright spot upon the moon" (*Eng. Mec.*, 103-10). It was on the north shore of the Mare Crisium, and "looked almost like a star." In Dr. Thomas' opinion, it was sunlight reflected from the rim of a small crater. The crater Picard is near the north shore of the Mare Crisium, and most of the illuminations near Picard have occurred several months from an opposition of Mars.

In December, 1915, another new formation upon the moon— reported from the Observatory of Paris—something like a black wall from the center to the ramparts of Aristillus (*Bull. Soc. Astro. de France*, 30-383).

Jan. 12, 1916—a shock in Cincinnati, Ohio. Buildings were shaken. The quake was from an explosion in the sky. Flashes were seen in the sky. (*New York Herald*, Jan. 13, 1916.)

Feb. 9, 1916—opposition of Mars.

In the *English Mechanic*, 104-71, James Ferguson writes that someone had seen, at 11 o'clock, night of July 31, 1916, at Ballinasloe, Ireland, just such a moving thing, or just such a sailing, exploring thing as is now familiar in our records. For fifteen minutes it moved in a northwesterly direction. For three quarters of an hour it was stationary. Then it moved back to the point where first it had been seen, remaining visible until four o'clock in the morning. Whatever this object may have been, it left the sky at about the time that Venus appeared, as a "morning star," in the sky at Ballinasloe, and resembles the occurrence of Sept. 11, 1852, reported by Lord Wrottesley. Inferior conjunction of Venus was upon July 3, 1916. We have noticed that all occurrences that we somewhat reluctantly associate with nearness of Venus associate more with times of greatest brilliance, five weeks before and after inferior conjunction, than with dates of conjunction. Somebody may demonstrate that at these times Venus comes closest to this earth.

Oct. 10, 1916—a reddish shadow that spread over part of the lunar crater Plato; reported from the Observatory of Florence, Italy (*Sci. Amer.*, 121-181).

Nov. 25, 1916—about twenty-five bright flashes, in rapid succession, in the sky of Cardiff, Wales, according to Arthur Mee (*Eng. Mec.*, 104-239).

Col. Markwick writes, in the *Jour. B. A. A.*, 27-188, that, at 6:10 P.M., April 15, 1917, he had seen, upon the sun, a solitary spot, different from all sunspots that he had seen in an experience of forty-three years. Col.

Markwick had written to Mr. Maunder, of the Greenwich Observatory, and had been told that, in photographs taken of the sun upon this day, one at 11:17 and another at 11:20 o'clock, there was no sign of a sunspot.

July 4, 1917—an eclipse of the sun, and an extraordinary luminous object said to have been a meteor, in France (*Bull. Soc. Astro, de France,* 31-299). About 6:20 P.M., this day, there was an explosion over the town of Colby, Wisconsin, and a stone fell from the sky (*Science,* Sept. 14, 1917).

Aug. 29, 1917—a luminous object that was seen moving upon the moon (*Bull. Soc. Astro. de France,* 31-439).

Feb. 21, 1919—an intensely black line extending out from the lunar crater Lexall (*Eng. Mec.*, 109-517).

Upon May 19, 1919, while Harry Hawker was at sea, untraceable messages, meaningless in the languages of this earth, were picked up by wireless, according to dispatches to the newspapers. They were interpreted as the letters *K U J* and *V K A J.*

In October, 1913, occurred something that may not be so very mysterious because of nearness to the sea. One supposes that if extra-mundane vessels have sometimes come close to this earth, then sailing away, terrestrial aeronauts may have occasionally left this earth, or may have been seized and carried away from this earth. Upon the morning of Oct. 13, 1913, Albert Jewel started to fly in his aeroplane from Hempstead Plains, Long Island, to Staten Island. The route that he expected to take was over Jamaica Bay, Brooklyn, Coney Island, and the Narrows. *New York Times,* Oct. 14, 1913—"That was the last seen or heard of him . . . he has been as completely lost as if he had evaporated into air." But as to the disappearance of Capt. James there are circumstances that do call for especial attention. *New York Times,* June 2, 1919 —that Capt. Mansell R. James was lost somewhere in the Berkshire Hills, upon his flight from Boston to Atlantic City, or, rather, upon the part of his route between Lee, Mass., and Mitchel Field, Long Island. He had left Lee upon May 29th. Over the Berkshires, or in the Berkshires, he had disappeared. According to later dispatches, searching parties had "scoured" the Berkshires, without finding a trace of him. Upon June 4th, army planes arrived and searched systematically. There was general excitement, in this mystery of Capt. James. Rewards were offered; all subscribers of the Southern New England Telephone Company were enlisted in a quest for news of any kind; boy scouts turned out. Up to this date of writing there has been nothing but a

confusion of newspaper dispatches: that two children had seen a plane, about thirteen miles north of Long Island Sound; that two men had seen a plane fall into the Hudson River, near Poughkeepsie; that, in a gully of Mount Riga, near Millerton, N. Y., had been found the remains of a plane; that part of a plane had been washed ashore from Long Island Sound, near Branford. The latest interest in the subject that I know of was in the summer of 1921. A heavy object was known to be at the bottom of the Hudson River, near Poughkeepsie, and was thought to be Capt. James' plane. It was dredged up and found to be a log.

For an extraordinary story of windows, in Newark, N. J., that were perforated by unfindable bullets, see *New York Evening Telegram,* Sept. 19, 1919, and the *Newark Evening News.* The occurrence is a counterpart of Mikkelsen's experience.

The detonations at Reading were heard seven years apart. Here it is not quite seven years later. London *Times,* Sept. 26, 1919— that upon September 25, a shock had been felt at Reading; that inquiries had led to information of no known explosion near Reading. In the *Times,* October 14, Mr. H. L. Hawkins writes that the shock was "quite definitely an earthquake, but its origin was superficial" and that the shock "was transmitted through the earth more than through the air." In the London *Daily Chronicle,* September 27, Mr. Hawkins, having considered all suggestions that the shock was a subterranean earthquake, had written: "However, as the whole thing terminated in a bump and a big bang, without subsequent shaking of the ground, it points more to an explosion of a natural type up in the air than to a real earthquake." And, in the London *Daily Mail,* Mr. Hawkins is quoted: that if the detonation were local, he would believe that it was an aerial explosion ("meteoric"); but, if it were widespread, it would be considered an earthquake. And in the whole series of the Reading phenomena, this violent detonation was most distinctly local to Reading.

Reading Observer, Sept. 27, 1919—"The most probable explanation of the occurrence is that there was an explosion somewhere near enough to affect the town. . . . Officials at the Greenwich Observatory were unable to throw any light on the matter, and said that their instruments showed no signs of earth-disturbance."

It is said that the sound and shock were violent, and that, in the residential parts of Reading, the streets were crowded with persons

discussing the occurrence.

There was a similar shock in Michigan, Nov. 27, 1919. In many cities, persons rushed from their homes, thinking that there had been an earthquake (*New York Times*, November 28). But, in Indiana, Illinois, and Michigan, a "blinding glare" was seen in the sky. Our acceptance is that this occurrence is, upon a small scale, of the type of many catastrophes in Italy and South America, for instance, when just such "blinding glares" have been seen in the sky, data of which have been suppressed by conventional scientists, or data of which have not impressed conventional scientists.

English Mechanic, 110-257—J. W. Scholes, of Huddersfield, writes that, upon Dec. 19, 1919, he saw, near the lunar crater Littrow, "a very conspicuous black-ink mark." Upon page 282, W. J. West, of Gosport, writes that he had seen the mark upon the 7th of December.

March 22, 1920—a light in the sky of this earth, and an illumination upon the moon (*Eng. Mec.*, 111-142). That so close to this earth is the moon that illuminations known as "auroral" often affect both this earth and the moon.

July 20 and 21, and Sept. 13, 1920—dull rumbling sounds and quakes at Comrie, Perthshire (London *Times*, July 23 and Sept. 14, 1920).

According to a dispatch to the *Los Angeles Times*—clipping sent to me by Mr. L. A. Hopkins, of Chicago—thunder and lightning and heavy rain, at Portland, Oregon, July 21, 1920: objects falling from the sky; glistening, white fragments that looked like "bits of polished china." "The explanation of the local Weather Bureau is that they may have been picked up by a whirlwind and carried to the district where they were found." The objection to this standardized explanation is the homogeneousness of the falling objects. How can one conceive of winds raging over some region covered with the usual great diversity of loose objects and substances, having a liking for little white stones, sorting over maybe a million black ones, green ones, white ones, and red ones, to make the desired selection? One supposes that a storm brought to this earth fragments of a manufactured object, made of something like china, from some other world.

In the *Literary Digest*, Sept. 2, 1921, is published a letter from Carl G. Gowman, of Detroit, Michigan, upon the fall from the sky, in southwest China, Nov. 17 (1920?) of a substance that resembled blood. It fell upon three villages close together, and was said to have fallen somewhere else forty miles away. The quantity was great: in one of the villages, the

substance “covered the ground completely.” Mr. Gowman accepts that this substance did fall from the sky, because it was found upon roofs as well as upon the ground. He rejects the conventional red-dust explanation, because the spots did not dissolve in several subsequent rains. He says that anything like pollen is out of the question, because at the time nothing was in bloom.

Nov. 23, 1920—a correspondent writes, to the *English Mechanic* 112-214, that he saw a shaft of light projecting from the moon, or a spot so bright that it appeared to project, from the limb of the moon, in the region of Funerius.

About Jan. 1, 1921—several irregular, black objects that crossed the sun. To the Rev. William Ellison (*Eng. Mec.*, 112-276) they looked like pieces of burnt paper.

July 25, 1921—a loud report, followed by a sharp tremor, and a rumbling sound, at Comrie (London *Times*, July 27, 1921).

July 31, 1921—a common indication of other lands from which come objects and substances to this earth—but our reluctance to bother with anything so ordinarily marvelous—

Because we have conceived of intenser times and furies of differences of potential between this earth and other worlds: torrents of dinosaurs, in broad volumes that were streaked with lesser animals, pouring from the sky, with a foam of tusks and fangs, enveloped in a bloody vapor that was falsely dramatized by the sun, with rainbow-mockery. Or, in terms of planetary emotions, such an outpouring was the serenade of some other world to this earth. If poetry is imagery, and if a flow of images be solid poetry, such a recitation was in three-dimensional hyperbole that was probably seen, or overheard, and criticized in Mars, and condemned for its extravagance in Jupiter. Some other world, meeting this earth, ransacking his solid imagination and uttering her living metaphors: singing a flood of mastodons, purring her butterflies, bellowing an ardor of buffaloes. Sailing away—sneaking up close to the planet Venus, murmuring her antelopes, or arching his periphery and spitting horses at her—

Poor, degenerate times—nowadays something comes close to this earth and lisps little commonplaces to her—

July 31, 1921—a shower of little frogs that fell upon Anton Wagner’s farm, near Stirling, Conn. (*New York Evening World*, Aug. 1, 1921).

At sunset, Aug. 7, 1921, an unknown luminous object was seen, near the sun, at Mt. Hamilton, by an astronomer, Prof. Campbell, and by one of

those who may some day go out and set foot upon regions that are supposed not to be: by an aviator, Capt. Ricken-backer. In the *English Mechanic*, 114-211, another character in these fluttering vistas of the opening of the coming drama of Extra-geography, Col. Markwick, a conventional astronomer and also a recorder of strange things, lists other observations upon this object, the earliest upon the 6th, by Dr. Emmert, of Detroit. In the *English Mechanic*, 114-241, H. P. Hollis, once upon a time deliciously "exact" and positive, says something, in commenting upon these observations, that looks like a little weakness in Exclusionism, because the old sureness is turning slightly shaky—"that there are more wonderful things in the sky than we suspect, or that it is easy to be self-deceived."

It is funny to read of an "earthquake," described in technical lingo, and to have a datum that indicates that it was no earthquake at all, in the usual seismologic sense, but a concussion from an explosion in the sky. Aug. 7, 1921—a severe shock at New Canton, Virginia. See *Bull. Seis. Soc. Amer., 11*-197—Prof. Stephen Taber's explanation that the shock had probably originated in the slate belt of Buckingham County, intensity about *V* on the *R.-F.* scale. But then it is said that, according to the "authorities" of the McCormick Observatory, the concussion was from an explosion in the sky. The time is coming when nothing funny will be seen in this subject, if some day be accepted at least parts of the masses of data that I am now holding back, until I can more fully develop them—that some of the greatest catastrophes that have devastated the face of this earth have been concussions from explosions in the sky, so repeating in a local sky weeks at a time, months sometimes, or intermittently for centuries, that fixed origins above the ravaged areas are indicated.

New York Tribune, Sept. 2, 1921:

"J. C. H. Macbeth, London Manager of the Marconi Wireless Telegraph Company, Ltd., told several hundred men, at a luncheon of the Rotary Club, of New York, yesterday, that Signor Marconi believed he had intercepted messages from Mars, during recent atmospheric experiments with wireless on board his yacht *Electra*, in the Mediterranean. Mr. Macbeth said that Signor Marconi had been unable to conceive of any other explanation of the fact that, during his experiments, he had picked up magnetic wave-lengths of 150,000 meters, whereas the maximum length of wave-production in the world today is 14,000 meters. The regularity of the signals, Mr. Macbeth declared, disposed of any assumption that the waves might have been

caused by electrical disturbance. The signals were unintelligible, consisting apparently of a code, the speaker said, and the only signal recognized was one resembling the letter V in the Marconi code." See datum of May 19, 1919.

But, in the summer of 1921, the planet Mars was far from opposition. The magnetic vibrations may have come from some other world. They may have had the origin of the sounds that have been heard at regular intervals—

The San Salvadors of the sky—

And we return to the principle that has been our re-enforcement throughout: that existence is infinite serialization, and that, except in particulars, it repeats—

That the dot that spread upon the western horizon of Lisbon, March 4, 1493, cannot be the only ship that comes back from the unknown, cargoed with news—

And it may be September this, nineteen hundred and twenty or thirty something, or February that, nineteen hundred and twenty or thirty something else—and, later, see record of it in *Eng. Mec.*, or *Sci. Amer.*, vol. and p. something or another—a speck in the sky of this earth—the return of somebody from a San Salvador of the sky—and the denial by the heavens themselves, which may answer with explosions the vociferations below them, of false calculations upon their remotenesses. If the heavens do not participate with snow, the skyscrapers will precipitate torn up papers and shirts and skirts, too, when the papers give out.

There will be a procession. Somebody will throw little black pebbles to the crowds. Over his procession will fly blue-fringed cupids. Later he will be insulted and abused and finally hounded to his death. But, in that procession, he will lead by the nose an outrageous thing that should not be: about ten feet long, short-winged, waddling on webbed feet. Insult and abuse and death —he will snap his fingers under the nose of the outrageous thing. It will be worth a great deal to lead that by the nose and demonstrate that such things had been seen in the sky, though they had been supposed to be angels. It will be a great moment for somebody. He will come back to New York, and march up Broadway with his angel.

Some now unheard-of De Soto, of this earth, will see for himself the Father of Cloudbursts.

A Balboa of greatness now known only to himself will stand on a ridge in the sky between two auroral seas.

Fountains of Everlasting Challenge.

Argosies in parallel lines and rabbles of individual adventurers. Well enough may it be said that they are seeds in the sky. Of such are the germs of colonies.

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THAT the Geo-system is an incubating organism, of which this earth is the nucleus—but an organism that is so strongly characterized by conditions and features of its own that likening it to any object internal to it is the interpreting of a thing in terms of a constituent—so that we think of an organism that is incompletely, or absurdly inadequately, expressible in terms of the egg-like and the larval and other forms of the immature—a geo-nucleated system that is dependent upon its externality as, in one way or another, is every similar, but lesser and included, thing — stimulated by flows of force that are now said to be meteoric, though many so-called "meteoric" streams seem more likely to be electric, that radiate from the umbilical channels of its constellations—vitalized by its sun, which is itself replenished by the comets, which, coming from external reservoirs of force, impart to the sun their freightages, and, unaffected by gravitation, return to an external existence, some of them even touching the sun, but showing no indication of supposed solar attraction.

In a technical sense we give up the doctrine of Evolution. Ours is an expression upon Super-embryonic Development, in one enclosed system. Ours is an expression upon Design underlying and manifesting in all things within this one system, with a Final Designer left out, because we know of no designing force that is not itself the product of remoter design. In terms of our own experience we cannot think of an ultimate designer, any more than we can think of ultimacy in any other respect. But we are discussing a system that, in our conception, is not a final entity; so then no metaphysical expression upon it is required.

I point out that this expression of ours is not meant for aid and comfort to the reactionaries of the type of Col. W. J. Bryan, for instance: it is not altogether anti-Darwinian: the concept of Development replaces the concept of Evolution, but we accept the process of Selection, not to anything loosely known as Environment, but relatively to underlying Schedule and Design, predetermined and supervised, as it were, but by nothing that we conceive of in anthropomorphic terms.

I define what I mean by dynamic design, in the development of any embryonic thing: a pre-determined, or not accidental, or not irresponsible, passage along a schedule of phases to a climax of unification of many parts. Some of the aspects of this process are the simultaneous varying of parts, with destiny, and not with independence, for their rule, or with future co-ordinations and functions for their goal; and their survival while still incipient, not because they are fittest relatively to contemporaneous environment, so not because of usefulness or advantage in the present, inasmuch as at first they are not only functionless but also discordant with established relations, but surviving because they are in harmony with the dynamic plan of a whole being: and the presence of forces of suppression, or repression, as well as forces of stimulation and protection, so that parts are held back, or are not permitted to develop before their time.

If we accept that these circumstances of embryonic development are the circumstances of all wider development, within one enclosed system, the doctrine of Darwinian Evolution, as applied generally, will, in our minds, have to be replaced by an expression upon Super-embryonic Development, and Darwinism, unmodified, will become to us one more of the insufficiencies of the past. Darwinism concerns itself with the adaptations of the present, and does heed the part that the past has played, but, in Darwinism, there is no place for the influence of the future upon the present.

Consider any part of an embryonic thing—the heart of an embryo—and at first it is only a loop. It will survive, and it will be nourished in its functionless incipiency; also it will not be permitted to become a fully developed heart before its scheduled time arrives; its circumstances are dominated by what it will be in the future. The eye of an embryo is a better instance.

Consider anything of a sociologic nature that ever has grown: that there never has been an art, science, religion, invention that was not at first out of accord with established environment, visionary, preposterous in the light of later standards, useless in its in-cipiency, and resisted by established forces so that, seemingly animating it and protectively underlying it, there may have been something that in spite of its unfitness made it survive for future usefulness. Also there are data for the acceptance that all things, in wider being, are held back as well as protected and prepared for, and not permitted to develop before comes scheduled time. Langley’s flying machine makes

me think of something of the kind —that this machine was premature; that it appeared a little before the era of aviation upon this earth, and that therefore Langley could not fly. But this machine was capable of flying, because, some years later, Curtis did fly in it. Then one thinks that the Wright Brothers were successful, because they did synchronize with a scheduled time. I have heard that it is questionable that Curtis made no alterations in Langley's machine. There is no lack of instances. One of the greatest of secrets that have eventually been found out was for ages blabbed by all the pots and kettles in the world—but that the secret of the steam engine could not, to the lowliest of intellects, or to supposititiously highest of intellects, more than adumbratively reveal itself until came the time for its co-ordination with the other phenomena and the requirements of the Industrial Age. And coal that was stored in abundance near the surface of the ground—and the needs of dwellers over coal mines, veins of which were often exposed upon the surface of the ground, for fuel—but that this secret, too, obvious, too, could not be revealed until the coming of the Industrial Age. Then the building of factories, the inventing of machines, the digging of coal, and the use of steam, all appearing by simultaneous variation, and co-ordinating. Shores of North America—nowadays, with less hero-worship than formerly, historians tell us that, to English and French fishermen, the coast of Newfoundland was well-known, long before the year 1492; nevertheless, to the world in general, it was not, or, according to our acceptances, could not be, known. About the year 1500, a Portuguese fleet was driven by storms to the coast of Brazil, and returned to Europe. Then one thinks that likely enough, before the year 1492, other vessels had been so swept to the coasts of the western hemisphere, and had returned—but that data of westward lands could not emerge from the suppressions of that era—but that the data did survive, or were preserved for future usefulness— that there are "Thou shalt nots" engraved upon something underlying all things, and then effacing, when phases pass away.

We conceive now of all buildings—within one enclosed system— in terms of embryonic building, and of all histories as local aspects of Super-embryonic Development. Cells of an embryo build falsely and futilely, in the sense that what they construct will be only temporary and will be out of adjustment later. If, however, there are conditions by which successive stages must be traversed before the arrival of maturity, ours is an expression upon the functioning of the false and the futile, in which case these terms,

as derogations, should not be applied. We see that the cells that build have no basis of their own; that for their formations there is nothing of reason and necessity of their own, because they flourish in other formations quite as well. We see that they need nothing of basis, nor of guidance of their own, because basis and guidance are of the essence of the whole. All are responses, or correlates, to a succession of commandments, as it were, or of dominant, directing, supervising spirits of different eras: that they take on appearances that are concordant with the general gastrula era, changing when comes the stimulus to agree with the reptilian era, and again responding harmoniously when comes the time of the mammalian era. It is in accordance with our experience that never has human mind, scientific, religious, philosophic, formulated one basic thought, one finally true law, principle, or major premise from which guidance could be deduced. If any thought were true and final it would include the deduced. We conceive that there has been guidance, just the same, if human beings be conceived of as cellular units in one developing organism; and that human minds no more need foundations of their own than need the sub-embryonic cells that build so preposterously, according to standards of later growth, but build as they are guided to build. In this view, human reason is tropism, or response to stimuli, and reasoning is the trial-and-error process of the most primitive unicellular organisms, a susceptibility to underlying mandates, then a groping in perhaps all possible distortions until adjustment with underlying requirements is reached. In this view, then, though there are, for instance, no atoms in the Daltonian sense, if in the service of a building science, the false doctrine of the atoms be needed, the mind that responds, perhaps not to stimulus, but to requirement, which seems to be a negative stimulus, and so conceives, is in adjustment and reaches the state known as success. I accept, myself, that there may be Final Truth, and that it may be attainable, but never in a service that is local or special in any one science or nation or world.

It is our expression that temporary isolations characterize embryonic growth and super-embryonic growth quite as distinctly as do expansions and co-ordinations. Local centers of development in an egg—and they are isolated before they sketch out attempting relations. Or in wider being—hemisphere isolated from hemisphere, and nation from nation—then the breaking down of barriers —the appearance of Japan out of obscurity—threads of a military plasm are cast across an ocean by the United States.

Shafts of light that have pierced the obscurity surrounding planets —and something like a star shines in Aristarchus of the moon. Embryonic heavens that have dreamed—and that their mirages will be realized some day. Sounds and an interval; sounds and the same interval; sounds again—that there is one integrating organism and that we have heard its pulse.

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FEB. 7, 1922—an explosion "of startling intensity" in the sky of the northwestern point of the London Triangle (*Nature,* Feb. 23, 1922).

Repeating phenomena in a local sky—in *L'Astronomie,* 36-201, it is said that, at Orsay (Seine-et-Oise), Feb. 15, 1922, a detonation was heard in the sky, and that 9 hours later a similar sound was heard, and that an illumination was seen in the sky. It is said that, 10 nights later, at Verneuil, in the adjoining province, Oise, a great, fiery mass was seen falling from the sky.

March 12, 1922—rocks that had been falling "from the clouds," for three weeks, at Chico, a town in an "earthquake region" in California (*New York Times,* March 12, 1922). Large, smooth rocks that "seemed to come straight from the clouds."

In the *San Francisco Chronicle,* in issues dating from the 12th to the 18th of March—clippings sent to me by Mr. Maynard Shipley, writer and lecturer upon scientific subjects, if there be such subjects—the accounts are of stones that, for four months, had been falling intermittently from the sky, almost always upon the roofs of two adjoining warehouses, in Chico, but, upon one occasion, falling three blocks away: "a downpour of oval-shaped stones"; "a heavy shower of warm rocks." *San Francisco Call,* March 16—"warm rocks." It is said that crowds gathered, and that upon the 17th of March a "deluge" of rocks fell upon a crowd, injuring one person. The police "combed" all surroundings: the only explanation that they could think of was that somebody was firing stones from a catapult. One person was suspected by them, but, upon the 14th of March, a rock fell when he was known not to be in the neighborhood.

The circumstances point to one origin of these stones, stationary in the sky, above the town of Chico.

Upon the first of January, 1922, the attention of Marshal J. A. Peck, of Chico, had been called to the phenomena. After investigating more than two months, he said (*San Francisco Examiner,* March 14) "I could find no one through my investigations who could explain the matter. At various times I

have heard and seen the stones. I think someone with a machine is to blame."

Prof. C. K. Studley, vice-president of the Teachers' College, Chico, is quoted in the *Examiner:*

"Some of the rocks are so large that they could not be thrown by any ordinary means. One of the rocks weighs 16 ounces. They are not of meteoric origin, as seems to have been hinted, because two of them show signs of cementation, either natural or artificial, and no meteoric factor was ever connected with a cement factory."

Once upon a time, dogmatists supposed, asserted, angrily declared sometimes, that all stones that fall from the sky must be of "true meteoric material." That time is now of the past. See *Nature,* 105-759—a description of two dissimilar stones, cemented together, seen to fall from the sky, at Cumberland Falls, Ky., April 9, 1919.

Miriam Allen de Ford (P. O. Box 573, San Francisco, Cal.— or see the *Readers' Guide)* has sent me an account of her own observations. About the middle of March, 1922, she was in Chico, and investigated. Went to the scene of the falling rocks; discussed the subject with persons in the crowd. "While I was discussing it with some bystanders, I looked up at the cloudless sky, and suddenly saw a rock falling straight down, as if becoming visible when it came near enough. This rock struck the roof with a thud, and bounced off on the track beside the warehouse, and I could not find it." "I learned that the rocks had been falling since July, 1921, though no publicity arose until November."

There have been other phenomena at Chico. In the *New York Times,* Sept. 2, 1878, it is said that, upon the 20th of August, 1878, according to the *Chico Record,* a great number of small fishes fell from the sky, at Chico, covering the roof of a store, and falling in the streets, upon an area of several acres. Perhaps the most important observation is that they fell from a cloudless sky. Several occurrences are listed as earthquakes, by Dr. Holden, in his Catalogue; but the detonations that were heard at Oroville, a town near Chico, Jan. 2, 1887, are said, in the *Monthly Weather Review,* 1887-24, to have been in the sky. Upon the night of March 5-6, 1885, according to the *Chico Chronicle,* a large object, of very hard material, weighing several tons, fell from the sky, near Chico (*Monthly Weather Review,* March, 1885). In the year 1893, an iron object, said to be meteoritic, was found at Oroville (*Mems. Nat. Acad. Sci.,* 13-345).

My own idea is either that there is land over the town of Chico, and not far away, inasmuch as objects from it fall with a very narrow distribution, or that far away, and therefore invisible, there may be land from which objects have been carried in a special current to one very small part of this earth's surface. If anyone would like to read an account of stones that fell intermittently for several days, clearly enough as if in a current, or in a field of special force, of some kind, at Livet, near Clavaux, France, December, 1842, see the London *Times,* Jan. 13, 1843. There have been other such occurrences. Absurdly, when they were noticed at all, they were supposed to be psychic phenomena. I conceive that there is no more of the psychic to these occurrences than there is to the arrival of seeds from the West Indies upon the coast of England. Stones that fell upon a house, near the Pantheon, Paris, for three weeks, January, 1849—see Dr. Wallace's *Miracles and Modern Spiritualism,* p. 284. Several times, in the course of this book, I have tried to be reasonable. I have asked what such repeating phenomena in one local sky do indicate, if they do not indicate fixed origins in the sky. And if such occurrences, supported by many data in other fields, do not indicate the stationariness of this earth, with new lands not far away—tell me what it is all about. The falling stones of Chico—new lands in the sky—or what?

Boston Transcript, March 21, 1922—clipping sent to me by Mr. J. David Stern, Editor and Publisher of the *Camden* (N. J.) *Daily Courier*—

"Geneva, March 21—During a heavy snow storm in the Alps recently thousands of exotic insects resembling spiders, caterpillars, and huge ants fell on the slopes and quickly died. Local naturalists are unable to explain the phenomenon, but one theory is that the insects were blown in on the wind from a warmer climate."

The fall of unknown insects in a snow storm is not the circumstance that I call most attention to. It is worth noting that I have records of half a dozen similar occurrences in the Alps, usually about the last of January, but the striking circumstance is that insects of different species and of different specific gravities fell together. The conventional explanation is that a wind, far away, raised a great variety of small objects, and segregated them according to specific gravity, so that twigs and grasses fell in one place, dust some other place, pebbles somewhere else, and insects farther along somewhere. This would be very fine segregation. There was no very fine segregation in this occurrence. Something of a seasonal, or migratory,

nature, from some other world, localized in the sky, relatively to the Alps, is suggested.

May 4, 1922—discovery, by F. Burnerd, of three long mounds in the lunar crater Archimedes. See the *English Mechanic*, 115-194, 218, 268, 278. It seems likely that these constructions had been recently built.

St. Thomas, Virgin Islands, May 18, 1922 (*Associated Press)*— particles of matter falling continuously for several days. "The phenomenon is supposed here to be of volcanic origin, but all the volcanoes of the West Indies are reported as quiet."

New York Tribune, July 3, 1922—that, for the fourth time in one month, a great volume of water, or a "cloudburst," had poured from one local sky, near Carbondale, Pa.

Oct. 15, 1922—a large quantity of white substance that fell upon the shores of Lake Michigan, near Chicago. It fell upon the clothes of hundreds of persons, fell upon the campus of Northwestern University, likely enough fell upon the astronomical observatory of the University. It occurred to one of these hundreds, or thousands, of persons to collect some of this substance. He is Mr. L. A. Hopkins, 111 West Jackson Blvd., Chicago. He sent me a sample. I think that it is spider web, because it is viscous: when burned it chars with the crinkled effect of burned hair and feathers, and the odor is similar. But it is strong, tough substance, of a cottony texture, when rolled up. The interesting circumstance to me is that similar substance has fallen frequently upon this earth, in October, but that, in terrestrial terms, seasonal migrations of aeronautical spiders cannot be thought of, because in the tropics and in Australia, as well as in the United States and in England, such showers have occurred in October. Then something seasonal, but seasonal in an extra-mundane sense, is suggested. See the *Scientific Australian*, September, 1916—that, from October 5 to 29, 1915, an enormous fall of similar substance occurred upon a region of thousands of square miles, in Australia.

Time after time, in data that I have only partly investigated, occur declarations that, during devastations commonly known as "earthquakes," in Chile, the sky has flamed, or that "strange illuminations" in the sky have been seen. In the *Bull. Seis. Soc. Amer.*, for instance, some of these descriptions have been noted, and have been hushed up with the explanation that they were the reports of unscientific persons.

Latest of the great quakes in Chile—1,500 dead “recovered” in one of the cities of the Province of Atacama. *New York Tribune,* Nov. 15, 1922—”Again, today, severe earthquakes shook the Province of Coquimbo and other places, and strange illuminations were observed over the sea, off La Serena and Copiapo.”

Back to Crater Mountain, Arizona, for an impression—but far more impressive are similar data as to these places of Atacama and Copiapo, in Chile. In the year 1845, M. Darlu, of Valparaiso, read, before the French Academy, a paper, in which he asserted that, in the desert of Atacama, which begins at Copiapo, meteorites are strewn upon the ground in such numbers that they are met at every step. If these objects fell all at one time in this earthquake region, we have another instance conceivably of mere coincidence between the aerial and the seismic. If they fell at different times, the indications are of a fixed relationship between this part of Chile and a center somewhere in the sky of falling objects commonly called “meteorites” and of cataclysms that devastate this part of Chile with concussions commonly called “earthquakes.” There is a paper upon this subject in *Science,* 14-434. Here the extreme abundance asserted by M. Darlu is questioned: it is said that only thirteen of these objects were known to science. But, according to descriptions, four of them are stones, or stoneirons, differing so that, in the opinion of the writer, and not merely so interpreted by me, these four objects fell at different times. Then the nine others are considered. They are nickel-irons. They, too, are different, one from another. So then it is said that these thirteen objects, all from one place, were, with reasonable certainty, the products of different falls.

Behind concepts that sometimes seem delirious, I offer—a reasonable certainty—

That, existing somewhere beyond this earth, perhaps beyond a revolving shell in which the nearby stars are openings, there are stationary regions, from which, upon many occasions, have emanated “meteors,” sometimes exploding catastrophically over Atacama, Chile, for instance. Coasts of South America have reeled, and the heavens have been afire. Reverberations in the sky—the ocean has responded with islands. Between sky and earth of Chile there have been flaming intimacies of destruction and slaughter and woe—

Silence that is conspiracy to hide past ignorance; that is imbecility, or that is the unawareness of profoundest hypnosis.

Hypnosis—

That the seismologists, too, have functioned in preserving the illusion of this earth's isolation, and by super-embryonic processes have been hypnotized into oblivion of a secret that has been proclaimed with avalanches of fire from the heavens, and that has babbled from books of the blood of crushed populations, and that is monumentalized in ruins.

LO!

PART I

1

A NAKED man in a city street—the track of a horse in volcanic mud—the mystery of reindeer's ears—a huge, black form, like a whale, in the sky, and it drips red drops as if attacked by celestial swordfishes—an appalling cherub appears in the sea—

Confusions.

Showers of frogs and blizzards of snails—gushes of periwinkles down from the sky—

The preposterous, the grotesque, the incredible—and why, if I am going to tell of hundreds of these, is the quite ordinary so regarded?

An unclothed man shocks a crowd—a moment later, if nobody is generous with an overcoat, somebody is collecting handkerchiefs to knot around him.

A naked fact startles a meeting of a scientific society—and whatever it has for loins is soon diapered with conventional explanations.

Chaos and muck and filth—the indeterminable and the unrecordable and the unknowable—and all men are liars—and yet—

Wigwams on an island—sparks in their columns of smoke.

Centuries later—the uncertain columns are towers. What once were fluttering sparks are the motionless lights of windows. According to critics of Tammany Hall, there has been monstrous corruption upon this island: nevertheless, in the midst of it, this regularization has occurred. A woodland sprawl has sprung to stony attention.

The Princess Caraboo tells, of herself, a story, in an unknown language, and persons who were themselves liars have said that she lied, though nobody has ever known what she told. The story of Dorothy Arnold has been told thousands of times, but the story of Dorothy Arnold and the swan has not been told before. A city turns to a crater, and casts out eruptions, as lurid as fire, of living things—and where Cagliostro came from, and where

he went, are so mysterious that only historians say they know—venomous snakes crawl on the sidewalks of London—and a star twinkles—

But the underlying oneness in all confusions.

An onion and a lump of ice—and what have they in common?

Traceries of ice, millions of years ago, forming on the surface of a pond—later, with different materials, these same forms will express botanically. If something had examined primordial frost, it could have predicted jungles. Times when there was not a living thing on the face of this earth—and, upon pyrolusite, there were etchings of forms that, after the appearance of cellulose, would be trees. Dendritic sketches, in silver and copper, prefigured ferns and vines.

Mineral specimens now in museums—calcites that are piles of petals—or that long ago were the rough notes of a rose. Scales, horns, quills, thorns, teeth, arrows, spears, bayonets—long before they were the implements and weapons of living things they were mineral forms. I know of an ancient sketch that is today a specimen in a museum—a colorful, little massacre that was composed of calcites ages before religion was dramatized—pink forms impaled upon mauve spears, sprinkled with drops of magenta. I know of a composition of barytes that appeared ages before the Israelites made what is said to be history—blue waves heaped high on each side of a drab streak of forms like the horns of cattle, heads of asses, humps of camels, turbans, and upheld hands.

Underlying oneness—

A new star appears—and just how remote is it from drops of water, of unknown origin, falling on a cottonwood tree, in Oklahoma? Just what have the tree and the star to do with the girl of Swanton Novers, upon whom gushed streams of oils? And why was a clergyman equally greasy? Earthquakes and droughts and the sky turns black with spiders, and, near Trenton, N. J., something pegged stones at farmers. If lights that have been seen in the sky were upon the vessels of explorers from other worlds— then living in New York City, perhaps, or in Washington, D. C., perhaps, there are inhabitants of Mars, who are secretly sending reports upon the ways of this world to their governments?

A theory feels its way through surrounding ignorance—the tendrils of a vine feel their way along a trellis—a wagon train feels its way across a prairie—

Underlying oneness—

Projections of limonite, in a suffusion of smoky quartz—it will be ages before this little mineral sketch can develop into the chimneys and the smoke of Pittsburgh. But it reproduces when a volcano blasts the vegetation on a mountain, and smoke-forms hang around the stumps of trees. Broken shafts of an ancient city in a desert—they are projections in the tattered gusts of a sandstorm. It's Napoleon Bonaparte's retreat from Moscow—ragged bands, in the grimy snow, stumbling amidst abandoned cannon.

Maybe it was only coincidence—or what may there be to Napoleon's own belief that something was supervising him? Suppose it is that, in November, 1812, Napoleon's work, as a factor in European readjustments, was done. There was no military power upon this earth that could remove this one, whose work was done. There came coldness so intense that it destroyed the Grand Army.

Human knowledge—and its fakes and freaks. An astronomer, insulated by his vanity, seemingly remote from the flops and frailties of everybody else, may not be so far away as he thinks he is. He calculates where an undiscovered planet will be seen. "Lo!"—as the astronomers like to say—it is seen. But, for some very distressing, if not delightful, particulars, see, later, an account of Lowell's planet. Stars are said to be trillions of miles away, but there are many alleged remotenesses that are not so far away as they are said to be.

The Johnstown flood, and the smash of Peru, and the little nigger that was dragged to a police station—

. . . . . .

Terrified horses, up on their hind legs, hoofing a storm of frogs.

Frenzied springboks, capering their exasperations against frogs that were tickling them.

Storekeepers, in London, gaping at frogs that were tapping on their window panes.

We shall pick up an existence by its frogs.

Wise men have tried other ways. They have tried to understand our state of being, by grasping at its stars, or its arts, or its economics. But, if there is an underlying oneness of all things, it does not matter where we begin, whether with stars, or laws of supply and demand, or frogs, or Napoleon Bonaparte. One measures a circle, beginning anywhere.

I have collected 294 records of showers of living things.

Have I?

Well, there's no accounting for the freaks of industry.

It is the profound conviction of most of us that there never has been a shower of living things. But some of us have, at least in an elementary way, been educated by surprises out of much that we were "absolutely sure" of, and are suspicious of a thought, simply because it is a profound conviction.

I got the story of the terrified horses in the storm of frogs from Mr. George C. Stoker, of Lovelock, Nev. Mr. John Reid, of Love-lock, who is known to me as a writer upon geological subjects, vouches for Mr. Stoker, and I vouch for Mr. Reid. Mr. Stoker vouches for me. I have never heard of anything—any pronouncement, dogma, enunciation, or pontification—that was better substantiated.

What is a straight line? A straight line is the shortest distance between two points. Well, then, what is a shortest distance between two points? That is a straight line. According to the test of ages, the definition that a straight line is a straight line cannot be improved upon. I start with a logic as exacting as Euclid's.

Mr. Stoker was driving along the Newark Valley, one of the most extensive of the desert regions of Nevada. Thunderstorm. Down came frogs. Up on their hind legs went.the horses.

The exasperated springboks. They were told of, in the *Northern News* (Vryburg, Transvaal) March 21, 1925, by Mr. C. J. Grewar, of Uitenhage. Also I have a letter from Mr. Grewar.

The Flats—about 50 miles from Uitenhage—springboks leaping and shaking themselves unaccountably. At a distance, Mr. Grewar could conceive of no explanation of such eccentricities. He investigated, and saw that a rain of little frogs and fishes had pelted the springboks. Mr. Grewar heard that some time before, at the same place, there had been a similar shower.

Coffins have come down from the sky: also, as everybody knows, silk hats and horse collars and pajamas. But these things have come down at the time of a whirlwind. The two statements that I start with are that no shower exclusively of coffins, nor of marriage certificates, nor of alarm clocks has been recorded: but that showers exclusively of living things are common. And yet the explanation by orthodox scientists who accept that showers of living things have occurred is that the creatures were the products of whirlwinds. The explanation is that little frogs, for instance, fall from the sky, unmixed with anything else, because, in a whirlwind, the creatures

were segregated, by differences in specific gravity. But when a whirlwind strikes a town, away go detachables in a monstrous mixture, and there's no findable record of washtubs coming down in one place, all the town's cats in one falling battle that lumps its infelicities in one place, and all the kittens coming down together somewhere else, in a distant bunch that miaows for its lump of mothers.

See London newspapers, Aug. 18 and 19, 1921—innumerable little frogs that appeared, during a thunderstorm, upon the 17th, in streets of the northern part of London.

I have searched in almost all London newspapers, and in many provincial newspapers, and in scientific publications. There is, findable by me, no mention of a whirlwind upon the 17th of August, and no mention of a fall from the sky of anything else that might be considered another segregated discharge from a whirlwind, if there had been a whirlwind.

A whirlwind runs amok, and is filled with confusions: and yet to the incoherences of such a thing have been attributed the neatest of classifications. I do not say that no wind ever scientifically classifies objects. I have seen orderly, or logical, segregations by wind-action. I ask for records of whirlwinds that do this. There is no perceptible science by a whirlwind, in the delivery of its images. It rants trees, doors, frogs, and parts of cows. But living things have fallen from the sky, or in some unknown way have appeared, and have arrived homogeneously. If they have not been segregated by winds, something has selected them.

There have been repetitions of these arrivals. The phenomenon of repetition, too, is irreconcilable with the known ways of whirlwinds. There is an account, in the London *Daily News*, Sept. 5, 1922, of little toads, which for two days had been dropping from the sky, at Chalon-sur-Saone, France.

Lies, yarns, hoaxes, mistakes—what's the specific gravity of a lie, and how am I to segregate?

That could be done only relatively to a standard, and I have never heard of any standard, in any religion, philosophy, science, or complication of household affairs that could not be made to fit any requirement. We fit standards to judgments, or break any law that it pleases us to break, and fit to the fracture some other alleged law that we say is higher and nobler. We have conclusions, which are the products of senility or incompetence or

credulity, and then argue from them to premises. We forget this process, and then argue from the premises, thinking we began there.

There are accounts of showering things that came from so far away that they were unknown in places where they arrived.

If only horses and springboks express emotions in these matters, we'll be calm thinking that even living things may have been transported to this earth from other worlds.

Philadelphia Public Ledger, Aug. 8, 1891—a great shower of fishes, at Seymour, Ind. They were unknown fishes. *Public Ledger*, Feb. 6, 1890—a shower of fishes, in Montgomery County, California. "The fishes belong to a species altogether unknown here." *New York Sun*, May 29, 1892—a shower, at Coalburg, Alabama, of an enormous number of eels that were unknown in Alabama. Somebody said that he knew of such eels, in the Pacific Ocean. Piles of them in the streets—people alarmed—farmers coming with carts, and taking them away for fertilizing material.

Our subject has been treated scientifically, or too scientifically. There have been experiments. I have no more of an ill opinion of experimental science than I have of everything else, but I have been an experimenter, myself, and have impressions of the servile politeness of experiments. They have such an obliging, or ingratiating, way that there's no trusting the flatterers. In the *Redruth* (Cornwall, England) *Independent*, Aug. 13, and following issues, 1886, correspondents tell of a shower of snails near Redruth. There were experiments. One correspondent, who believed that the creatures were sea snails, put some in salt water. They lived. Another correspondent, who believed that they were not sea snails, put some in salt water. They died.

I do not know how to find out anything new without being offensive. To the ignorant, all things are pure: all knowledge is, or implies, the degradation of something. One who learns of metabolism, looks at a Venus, and realizes she's partly rotten. However, she smiles at him, and he renews his ignorance. All things in the sky are pure to those who have no telescopes. But spots on the sun, and lumps on the planets—and, being a person of learning, or, rather, erudition, myself, I've got to besmirch something, or nobody will believe I am—and I replace the pure, blue sky with the wormy heavens—

London *Evening Standard*, Jan. 3, 1924—red objects falling with snow at Halmstead, Sweden.

They were red worms, from one to four inches in length. Thousands of them streaking down with the snowflakes—red ribbons in a shower of confetti—a carnival scene that boosts my discovery that meteorology is a more picturesque science than most persons, including meteorologists, have suspected—and I fear me that my attempt to besmirch has not been successful, because the worms of heaven seem to be a jolly lot. However, I cheer up at thought of chances to come, because largely I shall treat of human nature.

But how am I to know whether these things fell from the sky in Sweden, or were imagined in Sweden?

I shall be scientific about it. Said Sir Isaac Newton—or virtually said he —"If there is no change in the direction of a moving body, the direction of a moving body is not changed." "But," continued he, "if something be changed, it is changed as much as it is changed." So red worms fell from the sky, in Sweden, because from the sky, in Sweden, red worms fell. How do geologists determine the age of rocks? By the fossils in them. And how do they determine the age of the fossils? By the rocks they're in. Having started with the logic of Euclid, I go on with the wisdom of a Newton.

New Orleans Daily Picayune, Feb. 4, 1892—enormous numbers of unknown brown worms that had fallen from the sky, near Clifton, Indiana. *San Francisco Chronicle*, Feb. 14, 1892—myriads of unknown scarlet worms—somewhere in Massachusetts—not seen to fall from the sky, but found, covering several acres, after a snow-storm.

It is as if with intelligence, or with the equivalence of intelligence, something has specialized upon transporting, or distributing, immature and larval forms of life. If the gods send worms, that would be kind if we were robins.

In *Insect Life*, 1892, p. 335, the Editor, Prof. C. V. Riley, tells of four other mysterious appearances of worms, early in the year 1892. Some of the specimens he could not definitely identify. It is said that at Lancaster, Pa., people in a snowstorm caught falling worms on their umbrellas.

The wise men of our tribes have tried to find God in a poem, or in whatever they think they mean by a moral sense in people, or in inscriptions in a book of stone, which by one of the strangest freaks of omission is not now upon exhibition in from fifteen to twenty synagogues in Asia Minor, and all up and down Italy—

Crabs and periwinkles—

Ordinary theologians have overlooked crabs and periwinkles—

Or mystery versus the fishmonger.

Upon May 28, 1881, near the city of Worcester, England, a fishmonger, with a procession of carts, loaded with several kinds of crabs and periwinkles, and with a dozen energetic assistants, appeared at a time when nobody on a busy road was looking. The fishmonger and his assistants grabbed sacks of periwinkles, and ran in a frenzy, slinging the things into fields on both sides of the road. They raced to gardens, and some assistants, standing on the shoulders of other assistants, had sacks lifted to them, and dumped sacks over the high walls. Meanwhile other assistants, in a dozen carts, were furiously shoveling out periwinkles, about a mile along the road. Also, meanwhile, several boys were busily mixing in crabs. They were not advertising anything. Above all there was secrecy The cost must have been hundreds of dollars. They appeared without having been seen on the way, and they melted away equally mysteriously. There were houses all around, but nobody saw them.

Would I be so kind as to tell what, in the name of some slight approximation to sanity, I mean by telling such a story?

But it is not my story. The details are mine, but I have put them in, strictly in accordance with the circumstances. There was, upon May 28, 1881, an occurrence near Worcester, and the conventional explanation was that a fishmonger did it. Inasmuch as he did it unobserved, if he did it, and inasmuch as he did it with tons upon acres, if he did it, he did it as I have described, if he did it.

In *Land and Water,* June 4, 1881, a correspondent writes that, in a violent thunderstorm, near Worcester, tons of periwinkles had come down from the sky, covering fields and a road, for about a mile. In the issue of June 11th, the Editor of *Land and Water* writes that specimens had been sent to him. He notes the mysterious circumstance, or the indication of a selection of living things, that appears in virtually all the accounts. He comments upon an enormous fall of sea creatures, unaccompanied by sand, pebbles, other shells, and seaweed.

In the *Worcester Daily Times,* May 30, it is said that, upon the 28th, news had reached Worcester of a wonderful fall from the sky of periwinkles on Cromer Gardens Road, and spread far around in fields and gardens. Mostly, people of Worcester were incredulous, but some had gone to the place. Those who had faith returned with periwinkles.

Two correspondents then wrote that they had seen the periwinkles upon the road before the storm, where probably a fishmonger had got rid of them. So the occurrence conventionalized, and out of these surmises arose the story of the fishmonger, though it has never been told before, as I have told it.

Mr. J. Lloyd Bozward, a writer whose notes on meteorological subjects are familiar to readers of scientific periodicals of this time, was investigating, and his findings were published in the *Worcester Evening Post*, June 9th. As to the story of the fishmonger, note his statement that the value of periwinkles was 16 shillings a bushel. He says that a wide area on both sides of the road was strewn with periwinkles, hermit crabs, and small crabs of an unascertained species. Worcester is about 30 miles from the mouth of the River Severn, or, say, about 50 miles from the sea. Probably no fishmonger in the world ever had, at one time, so many periwinkles, but as to anybody having got rid of a stock, because of a glutted market, for instance, Mr. Bozward says: “Neither upon Saturday, the 28th, nor Friday, the 27th, was there such a thing procurable in Worcester as a live periwinkle.” Gardens as well as fields were strewn. There were high walls around these gardens. Mr. Bozward tells of about 10 sacks of periwinkles, of a value of about £20, in the markets of Worcester, that, to his knowledge, had been picked up. Crowds had filled pots and pans and bags and trunks before he got to the place. “In Mr. Maund’s garden, two sacks were filled with them.” It is his conclusion that the things fell from the sky during the thunderstorm. So his is the whirlwind-explanation.

There are extraordinary occurrences, and conventionalization cloaks them, and the more commonplace the cloakery, the more satisfactory. Periwinkles appear upon a tract of land, through which there is a road. A fishmonger did it.

But the crabs and the fishmonger—and if the fishmonger did the periwinkles, did he do the crabs, if he did it?

Or the crabs and the whirlwind—and, if the periwinkles were segregated from pebbles and seaweed, why not from the crabs, if segregation did it?

The strongest point for the segregationists is in their own mental processes, which illustrate that segregations, whether by wind action, or not, do occur. If they have periwinkles and crabs to explain, and, say, that with a story of a fishmonger, or of a whirlwind, they can explain the

periwinkles, though so they cannot explain the crabs, a separation of data occurs in their mentalities They forget the crabs and tell of the periwinkles.

2

FROGS and fishes and worms—and these are the materials of our expression upon all things Hops and flops and squirms—and these are the motions.

But we have been considering more than matter and motion, to start with: we have been considering attempts by scientists to explain them. By *explanation*, I mean *organization.* There is more than matter and motion in our existence: there is organization of matter and motion.

Nobody takes a little clot that is central in a disease germ, as Absolute Truth; and the latest scientific discovery is only something for ideas to systematize around. But there is this systematization, or organization, and we shall have to consider it.

There is no more meaning—though that may be utmost meaning—to arrangements of observations, than there is to arrangements of protoplasm in a microbe, but it must be noted that scientific explanations do often work out rather well—but say in medical treatments, if ailments are mostly fancied; or in stock-market transactions, except in a crisis; or in expert testimony in the courts, except when set aside by other expert testimony—

But they are based upon definitions—

And in phenomenal existence there is nothing that is independent of everything else. Given that there is Continuity, everything is a degree or aspect of whatever everything else is. Consequently there is no way of defining anything, except in terms of itself. Try any alleged definition. What is an island? An island is a body of land completely surrounded by water. And what is a body of land that is completely surrounded by water?

Among savage tribesmen, there is a special care for, or even respectfulness for, the mentally afflicted. They are regarded as in some obscure way representing God's chosen. We recognize the defining of a thing in terms of itself, as a sign of feeble-mindedness. All scientists begin their works with just such definitions, implied, if not stated. And among our tribes there is a special care for, or even respectfulness for, scientists.

It will be an expression of mine that there is a godness in this idiocy. But, no matter what sometimes my opinion may be, I am not now writing that God is an Idiot. Maybe he, or it, drools comets and gibbers earthquakes, but the scale would have to be considered at least super-idiocy.

I conceive, or tell myself that I conceive, that if we could have a concept of our existence as a whole, we could have a kind of understanding of it, rather akin to what, say, cells in an animal organism could have of what is a whole to them, if they should not be mere scientists, trying to find out what a bone is, or the flow of blood in a vein is, in itself; but if they could comprehend what the structures and functions of the Organism are, in terms of Itself.

The attempted idea of Existence as Organism is one of the oldest of the pseudo-thoughts of philosophy. But the idea in this book is not metaphysical. Metaphysical speculations are attempts to think unthinkably, and it is quite hard enough to think thinkably. There can be nothing but bafflement for anybody who tries to think of Existence as Organism: our attempt will be to think of *an* existence as *an* organism. Having a childish liking for a little rhetoric, now and then, I shall call it God.

Our expressions are in terms of Continuity. If all things merge away into one another, or transmute into one another, so that nothing can be defined, they are of a oneness, which may be the oneness of one existence. I state that, though I accept that there is continuity, I accept that also there is discontinuity But there is no need, in this book, to go into the subject of continuity-discontinuity, because no statement that I shall make, as a monist, will be set aside by my pluralism. There is a Oneness that both submerges and individualizes.

By the continuity of all things we have, with a hop and a flop and a squirm, jumped from frogs toward finality. We have rejected whirlwinds and the fishmonger, and have incipient notions upon a selectiveness and an intelligent, or purposeful, distribution of living things.

What is selecting and what is distributing?

The old-fashioned theologian thinks of a being, with the looks of himself, standing aside somewhere and directing operations.

What, in any organism, is selecting and distributing—say, oxygen in lungs, and materials in stomachs?

The organism itself.

If we can think of our existence as a conceivable-sized formation — perhaps one of countless things, beings, or formations in the cosmos—we have graspableness, or we have the outlines and the limits within which to think.

We look up at the stars. The look is of a revolving shell that is not far away. And against such a view there is no opposition except by an authoritative feeble-mindedness, which most of us treat respectfully, because such is the custom in all more or less savage tribes.

Mostly in this book I shall specialize upon indications that there exists a transportory force that I shall call Tel*eportation.* I shall be accused of having assembled lies, yarns, hoaxes, and superstitions. To some degree I think so, myself. To some degree I do not. I offer the data.

3

THE subject of reported falls from the sky, of an edible substance, in Asia Minor, is confused, because reports have been upon two kinds of substances. It seems that the sugar-like kind cannot be accepted. In July, 1927, the Hebrew University of Jerusalem sent an expedition to the Sinai Peninsula to investigate reported showers of "manna." See the *New York Times*, Dec. 4, 1927. Members of the expedition found what they called "manna" upon leaves of tamarisk trees, and on the ground underneath, and explained that it was secreted by insects. But the observations of this expedition have nothing to do with data, or stories, of falls from the sky of fibrous, convoluted lumps of a substance that can be ground into an edible flour. A dozen times, since early in the 19th century—and I have no definitely dated data upon still earlier occurrences—have been reported showers of "manna" in Asia Minor.

An early stage within the shell of an egg—and a protoplasmic line of growth feels out through surrounding substance—and of itself it has no means of subsistence, or of itself it is lost. Nourishment and protection and guidance come to it from the whole.

Or, in wider existence—several thousand years ago—a line of fugitives feels out in a desert. It will be of use to coming social organizations. But in the desert, it is unprovided for and is withering. Food falls from the sky.

It is one of the most commonplace of miracles. Within any womb an embryonic thing is unable to provide for itself, but "manna" is sent to it. Given an organic view of an existence, we think of the supervision of a whole upon its parts.

Or that once upon a time, a whole responded to the need of a part, and then kept on occasionally showering "manna" thousands of years after a special need for it had ceased. This looks like stupidity. It is in one of my moments of piety that I say this, because, though in our neo-theology there is no worship, I note that in this conception of what we may call godness, I supply grounds for devotions. Let a god change anything, and there will be reactions of evil as much as of good. Only stupidity can be divine.

Or occasional falls of “manna,” to this day, in Asia Minor, may be only one factor in a wider continuance. It may be that an Organism, having once showered a merely edible substance upon its chosen phenomena, has been keeping this up, as a symbol of favoritism, by which said chosen phenomena have been receiving abundances of “manna” in many forms, ever since.

The substance that occasionally falls from the sky, in Asia Minor, comes from far away. The occurrences are far apart, in time, and always the substance is unknown where it falls, and its edibleness is sometimes found out by the sight of sheep eating it. Then it is gathered and sold in the markets. We are told that it has been identified as a terrestrial product. We are told that these showers are aggregations of *Lecanora esculenta,* a lichen that grows plentifully in Algeria. We are told that whirlwinds catch up these lichens, lying loose, or easily detachable, on the ground. But note this:

There have been no such reported showers in Algeria.

There have been no such reported showers in places between Algeria and Asia Minor.

The nearest similarity that I can think of is of tumble weeds, in the Western States, though tumble weeds are much larger. Well, then, new growths of them, when they’re not much larger. But I have never heard of a shower of tumble weeds. Probably the things are often carried far by whirlwinds, but only scoot along the ground. A story that would be similar to stories of lichens, from Algeria, falling in Asia Minor, would be of tumble weeds, never falling in showers, in Western States, but repeatedly showering in Ontario, Canada, having been carried there by whirlwinds.

Out of a dozen records, I mention that, in *Nature,* 43-255, and in *La Nature,* 36-82, are accounts of one of the showers, in Asia Minor. The Director of the Central Dispensary of Bagdad had sent to France specimens of an edible substance that had fallen from the sky, at Meridin, and at Diarbekis (Turkey in Asia) in a heavy rain, the last of May, 1890. They were convoluted lumps, yellow outside and white inside. They were ground into flour from which excellent bread was made. According to the ready-made convention, botanists said that the objects were specimens of *Lecanora esculenta,* lichens that had been carried in a whirlwind.

London *Daily Mail,* Aug. 13, 1913—that streets in the town of Kirkmanshaws, Persia, had been covered with seeds, which the people thought were the manna of biblical times. The Royal Botanical Society had

been communicated with, and had explained that the objects had been carried from some other part of this earth's surface by a whirlwind. "They were white in substance, and of a consistency of Indian corn."

I believe nothing. I have shut myself away from the rocks and wisdoms of ages, and from the so-called great teachers of all time, and perhaps because of that isolation I am given to bizarre hospitalities. I shut the front door upon Christ and Einstein, and at the back door hold out a welcoming hand to little frogs and periwinkles. I believe nothing of my own that I have ever written. I cannot accept that the products of minds are subject-matter for beliefs. But I accept, with reservations that give me freedom to ridicule the statement at any other time, that showers of an edible substance that has not been traced to an origin upon this earth, have fallen from the sky, in Asia Minor.

There have been suggestions that unknown creatures and unknown substances have been transported to this earth from other fertile worlds, or from other parts of one system, or organism, a composition of distances that are small relatively to the unthinkable spans that astronomers think they can think of. There have been suggestions of a purposeful distribution in this existence. Purpose in Nature is thinkable, without conventional theological interpretations, if we can conceive of our existence, or the so-called solar system, and the stars around, as one organic state, formation, or being. I can make no demarcation between the organic, or the functional, and the purposeful. When, in an animal-organism, osteoblasts appear and mend a broken bone, they represent purpose, whether they know what they're doing or not. Any adaptation may be considered an expression of purpose, if by purpose we mean nothing but intent upon adaptation. If we can think of our whole existence, perhaps one of countless organisms in the cosmos, as one organism, we can call its functions and distributions either organic or purposeful, or mechanically purposeful.

4

OVER the town of Noirfontaine, France, one day in April, 1842, there was a cloudless sky, but drops of water were falling. See back to data upon repetitions. The water was falling, as if from a fixed appearing-point, somewhere above the ground, to a definite area beneath. The next day water was still falling upon this one small area, as mysteriously as if a ghost aloft were holding the nozzle of an invisible hose.

I take this account from the journal of the French Academy of Sciences (*Comptes Rendus)*, vol. 14, p. 664.

What do I mean by that?

I don't mean anything by that. At the same time, I do mean something by the meaninglessness of that. I mean that we are in the helpless state of a standardless existence, and that the appeal to authority is as much of a wobble as any other of our insecurities.

Nevertheless, though I know of no standards by which to judge anything, I conceive—or accept the idea—of something that is The Standard, if I can think of our existence as an Organism. If human thought is a growth, like all other growths, its logic is without foundation of its own, and is only the adjusting constructiveness of all other growing things. A tree cannot find out, as it were, how to blossom, until comes blossom-time. A social growth cannot find out the use of steam engines, until comes steam-engine-time. For whatever is supposed to be meant by progress, there is no need in human minds for standards of their own: this is in the sense that no part of a growing plant needs guidance of its own devising, nor special knowledge of its own as to how to become a leaf or a root. It needs no base of its own, because the relative wholeness of the plant is relative baseness to its parts. At the same time, in the midst of this theory of submergence, I do not accept that human minds are absolute nonentities, just as I do not accept that a leaf, or a root, of a plant, though so dependent upon a main body, and so clearly only a part, is absolutely without something of an individualizing touch of its own.

It is the problem of continuity-discontinuity, which perhaps I shall have to take up sometime.

However—

London *Times,* April 26, 1821—that the inhabitants of Truro, Cornwall, were amused, astonished, or alarmed, "according to nerve and judgment," by arrivals of stones, from an unfindable source, upon a house in Carlow Street. The mayor of the town visited the place, and was made so nervous by the rattling stones that he called out a military guard. He investigated, and the soldiers investigated, and the clatter of theorists increased the noise. *Times,* May 1— stones still rattling, theorists still clattering, but nothing found out.

Flows of frogs—flows of worms—flows of water—flows of stones — just where do we expect to draw a line? Why not go on to thinking that there have been mysterious transportations of human beings?

We'll go on.

A great deal of the opposition to our data is connotative. Most likely when Dr. Gilbert rubbed a rod and made bits of paper jump on a table, the opposition to his magic was directed not so much against what he was doing as against what it might lead to. Witchcraft always has a hard time, until it becomes established and changes its name.

We hear much of the conflict between science and religion, but our conflict is with both of these. Science and religion always have agreed in opposing and suppressing the various witchcrafts. Now that religion is inglorious, one of the most fantastic of transferences of worships is that of glorifying science, as a beneficent being. It is the attributing of all that is of development, or of possible betterment to science. But no scientist has ever upheld a new idea, without bringing upon himself abuse from other scientists. Science has done its utmost to prevent whatever Science has done.

There are cynics who deny the existence of human gratitude. But it seems that I am no cynic. So convinced am I of the existence of gratitude that I see in it one of our strongest oppositions. There are millions of persons who receive favors that they forget: but gratitude does exist, and they've got to express it somewhere. They take it out by being grateful to science for all that science has done for them, a gratitude, which, according to their dull perceptions won't cost them anything. So there is economic indignation

against anybody who is disagreeable to science. He is trying to rob the people of a cheap gratitude.

I like a bargain as well as does anybody else, but I can't save expenses by being grateful to Science, if for every scientist who has perhaps been of benefit to me, there have been many other scientists who have tried to strangle that possible benefit. Also, if I'm dead broke, I don't get benefits to be grateful for.

Resistance to notions in this book will come from persons who identify industrial science, and the good of it, with the pure, or academic, or aristocratic sciences that are living on the repute of industrial science. In my own mind there is distinguishment between a good watchdog and the fleas on him. If the fleas, too, could be taught to bark, there'd be a little chorus that would be of some tiny value. But fleas are aristocrats.

London *Times,* Jan. 13, 1843—that, according to the *Courrier de l'Isére,* two little girls, last of December, 1842, were picking leaves from the ground, near Clavaux (Livet), France, when they saw stones falling around them. The stones fell with uncanny slowness. The children ran to their homes, and told of the phenomenon, and returned with their parents. Again stones fell, and with the same uncanny slowness. It is said that relatively to these falls the children were attractive agents. There was another phenomenon, an upward current, into which the children were dragged, as if into a vortex. We might have had data of mysterious disappearances of children, but the parents, who were unaffected by the current, pulled them back.

In the *Toronto Globe,* Sept. 9, 1880, a correspondent writes that he had heard reports of most improbable occurrences upon a farm, near the township of Wellesley, Ontario. He went to the place, to interview the farmer, Mr. Manser. As he approached the farmhouse, he saw that all the windows were boarded up. He learned that, about the end of July, windows had begun to break, though no missiles had been seen. The explanation by the incredulous was that the old house was settling. It was a good explanation, except for what it overlooked. To have any opinion, one must overlook something. The disregard was that, quite as authentic as the stories of breaking windows, were stories of falls of water in the rooms, having passed through walls, showing no trace of such passage. It is said that water had fallen in such volumes, from appearing-points in rooms, that the furniture of the house had been moved to a shed. In all our records openness

of phenomena is notable. The story is that showers fell in rooms, when the farmhouse was crowded with people. For more details see the *Halifax Citizen,* September 13.

I omit about sixty instances of seeming teleportations of stones and water, of which I have records. Numerousness hasn't any meaning, as a standard to judge by.

The simplest cases of seeming teleportations are flows of stones, into open fields, doing no damage, not especially annoying anybody, and in places where there were no means of concealment for mischievous or malicious persons. There is a story of this kind, in the *New York Sun,* June 22, 1884. June 16th—a farm near Trenton, N. J.—two young men, George and Albert Sanford, hoeing in a field—stones falling. There was no building anywhere near, and there was not even a fence behind which anybody could hide. The next day stones fell again. The young men dropped their hoes and ran to Trenton, where they told of their experiences. They returned with forty or fifty amateur detectives, who spread out and tried to observe something, or more philosophically sat down and arrived at conclusions without observing anything. Crowds came to the cornfield. In the presence of crowds, stones continued to fall from a point overhead. Nothing more was found out.

A pig and his swill—

Or Science and data—

Or that the way of a brain is only the way of a belly—

We can call the process that occurs in them either assimilative or digestive. The mind-worshiper might as well take guts for his god.

For many strange occurrences there are conventional explanations. In the mind of a conventionalist, reported phenomena assimilate with conventional explanations. There must be disregards. The mind must reject some data. This process, too, is both alimentary and mental.

The conventional explanation of mysterious flows of stones is that they are peggings by neighbors. I have given data as I have found them. Maybe they are indigestible. The conventional explanation of mysterious flows of water is that they are exudations from insects. If so there must sometimes be torrential bugs.

New York Sun, Oct. 30, 1892—that, day after day, in Oklahoma, where for weeks there had been a drought, water was falling upon a large cottonwood tree, near Stillwater. A conventionalist visited this tree. He

found insects. In *Insect Life*, 5-204, it is said that the Stillwater mystery had been solved. Dr. Neel, Director of the Agricultural Experimental Station, at Stillwater, had gone to the tree, and had captured some of the insects that were causing the precipitation. They were *Proconia undata* Fab.

And how am I going to prove that this was a senseless, or brutal, or anyway mechanical, assimilation?

We don't have proofs. We have expressions.

Our expression is that this precipitation in Oklahoma was only one of perhaps many. We find three other recorded instances, at this time, and if they be not attributable to exudations from insects —but we'll not prove anything. There is a theorem that Euclid never attempted. That is to take *Q. E. D.* as a proposition.

In *Science*, 21-94, Mr. H. Chaplin, of Ohio University, writes that, in the town of Akron, Ohio—about while water was falling upon a tree in Oklahoma—there had been a continuous fall of water, during a succession of clear days. Members of the faculty of Ohio University had investigated, but had been unable to solve the problem. There was a definite and persisting appearing-point from which to a small area near a brickyard, water was falling. Mr. Chaplin, who had probably never heard of similar occurrences far from damp places, thought that vapors from this brickyard were rising, and condensing, and falling back. If so there would often be such precipitations over ponds and other bodies of water.

About the same time, water was mysteriously appearing at Martinsville, Ohio, according to the *Philadelphia Public Ledger,* Oct. 19, 1892. Behind a house, a mist was falling upon an area not more than a dozen feet square. *St. Louis Globe-Democrat*, November 19 —that, in Water Street, Brownsville, Pa., there was a garden, in which was a peach tree, upon which water was falling. As to the insect-explanation, we note the statement that the water "seemed to fall from some height above the tree, and covered an area about 14 feet square."

For all I know, some trees may have occult powers. Perhaps some especially gifted trees have power to transport water, from far away, in times of need. I noted the drought in Oklahoma, and then I looked up conditions in Ohio and Pennsylvania. Rainfall was below normal. In Ohio, according to the *Monthly Weather Review,* of November, there was a drought. A watery manna came to chosen trees.

There is no sense in trying to prove anything, if all things are continuous, so that there isn't anything, except the inclusive of all, which may be Something. But aesthetically, if not scientifically, there may be value in expressions, and we'll have variations of our theme. There were, in places far apart, simultaneous flows of water from stationary appearing-points, in and around Charleston, S. C., in the period of the long series of earthquake shocks there. Later I shall touch more upon an idea that will be an organic interpretation of falls of water in places that have been desolated by catastrophes. About the middle of September, 1886, falling water from "a cloudless sky," never falling outside a spot 25 feet wide, was reported from Dawson, Ga. This shower was not intermittent. Of course the frequently mentioned circumstance of the "cloudless sky" has no significance. Water falling all the way from the sky, even at times of the slightest breezes, cannot be thought of as localizing strictly upon an area a few yards in diameter. We think of appearing-points a short distance above the ground. Then showers upon a space 10 feet square were reported from Aiken, S. C. There were similar falls of water at Cheraw, S. C. For particulars, see the *Charleston News and Courier,* October 8, 21, 25, 26. For an account of falls of water, "from a cloudless sky," strictly to one point, in Charlotte, N. C., according to investigations by a meteorologist, see the *Monthly Weather Review,* October, 1886. In the *New York Sun,* October 24, it is said that, for 14 days, water had been falling from "a cloudless sky," to a point in Chesterfield County, S. C., falling so heavily that streams of it had gushed from roof pipes.

Then came news that water was falling from a point in Charleston.

Several days before, in the *News and Courier,* had been published the insect-explanation of falls of water. In the *News and Courier,* November 5, a reporter tells that he had visited the place in Charleston, where it was said that water was falling, and that he had seen a fall of water. He had climbed a tree to investigate. He had seen insects.

But there are limits to what can be attributed, except by the most desperate explainers, to insects.

In the *Monthly Weather Review,* August, 1886, it is said that, in Charleston, September 4th, three showers of hot stones had been reported.

"An examination of some of these stones, shortly after they had fallen, forced the conviction that the public was being made the victim of a practical joke."

How an examination of stones could demonstrate whether they had been slung humorously or not, is more than whatever brains I have can make out. Upon September 4th, Charleston was desolated. The great earthquake had occurred upon August 31st, and continuing shocks were terrorizing the people. Still, I'd go far from my impressions of what we call existence, if I'd think that terror, or anything else, was ever homogeneous at Charleston, or anywhere else. Battles and shipwrecks, and especially diseases, are materials for humorists, and the fun of funerals never will be exhausted. I don't argue that in the midst of desolation and woe, at Charleston, there were no jokers. I tell a story as I found it recorded in the *Charleston News and Courier,* September 6, and mention my own conclusion, which is that wherever jocular survivors of the catastrophe may have been cutting up capers, they were not concerned in this series of occurrences.

At 2:30 o'clock, morning of September 4th, stones, which were found to be "warm," fell near the *News and Courier* building, some of them bounding into the press room. Five hours later, when there was no darkness to hide mischievous survivors, more stones fell. It was a strictly localized repetition, as if one persisting current of force. At 1:30 o'clock in the afternoon again stones fell, and these were seen, coming straight down from a point overhead. If any conviction was forced, it was forced in the same old way as that in which for ages convictions have been forced, and that is by forcing agreements with prior convictions. Other details were published in the *Richmond Whig:* it was told that the stones, which were flint pebbles, ranging from the size of a grape to the size of a hen's egg, had fallen upon an area of 75 square feet, and that about a gallon of them had been picked up. In *A Descriptive Narrative of the Earthquake of August 31, 1886,* Carl McKinley, an editor of the *News and Courier,* tells of two of these showers of stones, which. according to him, "undoubtedly fell."

The localized repetitions of showers of stones are so much like the localized repetitions of showers of water, that one, inclusive explanation, or expression, is called for. Insects did them? Or the fishmonger of Worcester had moved to South Carolina?

A complication has been developing. Little frogs fell upon Mr. Stoker and his horses, but we had no reason to think that either Mr. Stoker or his horses had anything to do with bringing about the precipitation. But the children of Clavaux did seem to have something to do with showers of

stones, and trees did seem to have something to do with the precipitations of water.

Rand Daily Mail, May 29, 1922—that Mr. D. Neaves, living near Roodeport, employed as a chemist in Johannesburg, having for several months endured showers of stones, had finally reported to the police. Five constables, having been sent to the place, after dark, had hardly taken positions around the house, when a stone crashed on the roof. Phenomena were thought to associate with the housemaid, a Hottentot girl. She was sent into the garden, and stones fell vertically around her. This is said to have been one of the most mysterious of the circumstances: stones fell vertically, so that there was no tracing of them to an origin. Mr. Neaves' home was an isolated building, except for outhouses. These outhouses were searched, but nothing to suspect was found. The stones continued to fall from an unknown source.

Police Inspector Cummings took charge. He ordered all members of the family, servants, and newspaper men to remain in the house for a while: so everybody was under inspection. Outside were constables, and all around were open fields, with no means of concealment. Stones fell on the roof. Watched by the police, the Hottentot girl went to the well. A large stone fell near her. She ran back to the house, and a stone fell on the roof. It is said that everything that could be done was done, and that the cordon of police was complete. More stones fell. Convinced that in some way the girl was implicated, the Inspector tied her hands. A stone fell on the roof.

Then everything was explained. A "civilian," concealed in one of the outhouses, had been caught throwing a stone. If so, whoever wrote this account did not mention the name of the culprit, and it is not said that the police made any trouble for him for having made them work.

Then everything was explained again. It was said that the girl, Sara, had been taken to the police station, where she had confessed. "It is understood that Sara admits being a party to all the stone-throwing, and has implicated two other children and a grown native. So ends the Roodeport ghost story, shorn of all its alleged supernatural trappings."

Though usually we do not think piously of the police, their stations are confessionals. But they're confessionals more in a scientific than in a religious sense. When a confessor holds a club over a conscience, he can bully statements with the success of any scientist who slugs data with a theory. There is much brutality in police stations and in laboratories, but I

can't say that we're trying to reform anything; and if there never has been a Newton, or a Darwin, or an Einstein—or a Moses, or a Christ, or a St. Augustine—who has practiced other than the third degree upon circumstances, I fear me that sometimes we are not innocent of one or two degrees, ourselves.

However, the story reads more as if the girl had been taken to a barber shop. Her story was shorn, we read. It was clipped bald of all details, such as the cordon of police, search of the outhouses, and the taking of precautions, such as will not fit in with this yarn of the tricky kids. In this book we shall note much shearing.

The writer, in the *Monthly Weather Review,* is not the only clipper who forces a conviction, when he can. There was a case, in another part of South Africa, not long before the bombardments at Roodeport began. In the *Klerksdorp Record,* Nov. 18, 1921, it is said that for several weeks there had been "mysterious stonethrowing by invisible agencies" at the houses of Mr. Gibbon Joseph and Mr. H. J. Minnaar, in North Street. A detective was put upon the case. He was a logician. It was a ghost story, or it was a case of malicious mischief. He could not pinch a ghost. So he accused two Negroes, and arrested them. The Negroes were tried upon testimony given by two boys of their race. But the boys contradicted each other, and it was brought out that they were lying. They admitted that the logical detective had promised them five shillings to substantiate his syllogisms.

In the *Journal of the Society for Psychical Research,* 12-260, is published a letter from Mr. W. G. Grottendieck, telling that, about one o'clock, one morning in September, 1903, at Dortrecht, Sumatra, he was awakened by hearing something fall on the floor of his room. Sounds of falling objects went on. He found that little, black stones were falling, with uncanny slowness, from the ceiling, or the roof, which was made of large, overlapping, dried leaves. Mr. Grottendieck writes that these stones were appearing near the inside of the roof, not puncturing the material, if through this material they were passing. He tried to catch them at the appearing-point, but, though they moved with extraordinary slowness, they evaded him. There was a coolie boy, asleep in the house, at the time. "The boy certainly did not do it, because at the time that I bent over him, while he was sleeping on the floor, there fell a couple of stones." There was no police station handy, and this story was not finished off with a neat and fashionable cut.

I point out that these stories of flows of stones are not conventional stories, and are not well known. Their details are not standardized, like "clanking chains" in ghost stories, and "eyes the size of saucers," in sea serpent yarns. Somebody in France, in the year 1842, told of slow-moving stones, and somebody in Sumatra, in the year 1903, told of slow-moving stones. It would be strange, if two liars should invent this circumstance—

And that is where I get, when I reason.

If strangeness be a standard for unfavorable judgment, I damn at a swipe most of this book.

But damnation is nothing to me. I offer the data. Suit yourself.

Nobody can investigate the reported phenomena that we're taking up, without noticing the number of cases in which boys and girls, but a great preponderance of girls, appear. An explanation by those who disregard a great deal—or disregard normally—is that youngsters are concerned so much, because it is their own mischief. Poltergeist-phenomena, or teleportations of objects, in the home of Mr. Frost, 8 Ferrostone-road, Hornsey, London, for several months, early in the year 1921, cannot be so explained. There were three children. Phenomena so frightened one of them that, in a nervous breakdown, she died (London *Daily Express*, April 2, 1921). Another, in a similar condition, was taken to the Lewisham (London) Hospital (London *Daily News*, April 30, 1921).

In attempting to rationalize various details that we have come upon, or to assimilate them, or to digest them, the toughest meal is swallowing statements upon mysterious appearances in closed rooms, or passages of objects and substances through walls of houses, without disturbing the material of the walls. Oh, yes, I have heard of "the fourth dimension," but I am going to do myself some credit by not lugging in that particular way of showing that I don't know what I'm writing about. There's a story in the *St. Louis Globe-Democrat*, Jan. 27, 1888—large stones that were appearing and "falling slowly" in closed rooms in the home of Mr. P. C. Martin, Caldwell County, N. C. *Madras* (India) *Mail*, March 5, 1888—pieces of brick that, in the presence of many investigators, were falling in a schoolroom, in Pondicherry.

I can understand this phenomenon, or alleged phenomenon, of appearances in closed rooms, no more than I can understand the passage of a magnetic field of force through the wall of a house, without disturbing the material. But lines of this force do not transport objects through a dense

material. Then I think of X-rays, which do something like this, if it be accepted that X-rays are aggregations of very small objects, or particles. X-rays do, or sometimes do, disturb materials penetrated by them, but this disturbance is not evident until after long continuance.

If there is Teleportation, it is in two orders, or fields: electric and non-electric—or phenomena that occur during thunderstorms, and phenomena that occur under "a cloudless sky," and in houses. In the hosts of stories that I have gathered—but with which I have not swamped this book—of showers of living things, the rarest of all statements is of injury to the falling creatures. Then, from impressions that have arisen from other data, we think that the creatures may not have fallen all the way from the sky, but may have fallen from appearing-points not high above the ground—or may have fallen a considerable distance under a counter-gravitational influence.

I think that there may be a counter-gravitational influence upon transported objects, because of the many agreeing accounts—more than I have told of—of slow-falling stones, by persons who had probably never heard of other stories of slow-falling stones, and because I have come upon records of similar magic, or witchcraft, in what will be accepted as sane and sober meteorological observations.

See the *Annual Register,* 1859-70—an account by Mr. E. J. Lowe, a meteorologist and an astronomer, of a fall of hailstones, at Nottingham, England, May 29, 1859. Though the objects were more than an inch across, they fell slowly. In September, 1873, near Clermont-Ferrand, France, according to *La Nature,* 7-289, hailstones, measuring from an inch to an inch and a half across, fell. They were under an unknown influence. Notwithstanding their size, they fell so slowly that they did no damage. Some fell upon roofs, and rebounded, and it was as if these shook off the influence. Those that rebounded then fell faster than fell those that came down in an unbroken fall. For other records of this phenomenon, see *Nature,* 36-445; *Illustrated London News,* 34-546; *Bull. Soc. Astro. de France,* June 19, 1900.

If in the general electric conditions of a thunderstorm there be sometimes a counter-gravitational effect upon objects, somebody might find out how counter-gravitationally to electrify aircraft and aviators. If all work is opposition to gravitation, somebody may make a big discovery of benefit to general laziness. Elevators in sky-scrapers might be run with half the power now needed. Here is an idea that may revolutionize industry, but just now I

am too busy revolutionizing everything else, and I give this idea to the world, with the generosity of somebody who bestows something that isn't any good to him.

But mysterious disappearances?

Our data have been upon mysterious appearances.

If I could appeal to what used to be supposed to be known as common sense, I'd ask whether something that mysteriously appears somewhere had not mysteriously disappeared somewhere else.

Annals of Electricity, 6-499—Liverpool, May 11, 1842—"not a breath of air." Suddenly clothes on lines on a common shot upward. They moved away slowly. Smoke from chimneys indicated that above ground there was a southward wind, but the clothes moved away northward.

There was another instance, a few weeks later. London *Times*, July 5, 1842—a bright, clear day, at Cupar, Scotland, June 30th— women hanging out clothes on a common. There was a sharp detonation, and clothes on lines shot upward. Some fell to the ground, but others went on and vanished. There was a seeming of selection, which, because of possible bearing upon various observations of ours interests me. Though this was a powerful force, nothing but the clothes it seized was affected. I wonder about the detonation, largely because it is in agreement with a detail of still another story.

The closeness in time of these two occurrences attracts my attention. They were a few weeks apart, and I have no other such record, until seventy-seven years later. A sensible suggestion is that somebody, in Cupar, having read the Liverpool story, had faked a similar story from his town. A suggestion that is not so sensible is that, in this year 1842, somebody had learned the secrets of teleportation, and to avoid attracting much attention in any one place was experimenting in places far apart. It seems likely enough to me that, if there be teleportation, human beings may have come upon knowledge of it, and may have used it.

"Likely enough?" a spiritualist would say. "Has he never heard of *apports?"*

But whether it's narrowness and bigotry, upon my part, or not, I do not go to seances for data. I have collected notes upon "mysterious robberies," wondering whether a teleportative power has ever been used criminally. As to *apports*, if a medium could transport sea shells from the sea to his cabinet, he could abstract funds from a bank to his pocket. If he could, but

would not, how account for his being a medium? Looking through newspapers, I have had a searching eye for something like an account of a medium, who had become mysteriously rich, in a town where there had been shortages of funds: clerks accused of embezzlement, and convicted, but upon evidence that was not altogether satisfactory. Although usually I can find data to "prove" anything that I want to "prove," I have come upon no such account, and I am skeptical as to *apports,* and think that mediums are like most of the rest of us, who are not criminals, having no exceptional abilities. However, there may be criminal adepts who are not known mediums.

There was, in June, 1919, at Islip, Northampton, England, an occurrence like the occurrences at Liverpool and Cupar. London *Daily Express,* June 12, 1919—a loud detonation—basketful of clothes shooting into the air. Then the clothes came down. There may be ineffective teleportative seizures.

London *Daily Mail,* May 6, 1910—phenomena near Cantillana, Spain. From ten o'clock in the morning until noon, May 4th, stones shot up from a spot in the ground. Loud detonations were heard. "Traces of an extinct volcano are visible at the spot, and it is believed that a new crater is being formed." But there is no findable record of volcanic activity in Spain, at this time—nor at any other time. I am reminded of the loud noises that often accompany poltergeist disturbances.

In *Niles' Weekly Register,* Nov. 4, 1815, there is an account of stones that had been watched rising in a field, near Marbleton, Ulster County, New York—that these stones had been seen to rise three or four feet from the ground, then moving horizontally, from thirty to sixty feet.

Out in open fields, there have been showers of water, strictly localized, and of unknown origin. A Dr. Neel will be heard from. He has captured, not indefinitely alluded to insects, but *Proconia undata* Fab. Every mystery has its fishmonger. Considered figuratively, he need not be a seller of fish. His name may be Smith, or O'Brien, or it may be Proconia Undata Fab.

But presumably in the wintertime, in England, members of the Proconia family are not busy and available for explanations. In the *Chorley* (Lancashire) *Standard,* Feb. 15, 1873, is a story of excitement in the town of Eccleston. At Bank House, occupied by two elderly women and their niece, streams of water started falling, about the first of February, seemingly from ceilings. Furniture was soaked, and the occupants of the

house were alarmed. The falls seemed to come from the ceiling, but "probably the most singular feature of the affair is that ceilings were apparently quite dry." See back to Mr. Grottendieck's story of objects that were appearing near a ceiling, or roof, with no signs of penetrating the material. Workmen had been called to the house, and had investigated, but were unable to explain. Openness again. House packed with neighbors, watching the showers. These data would make trouble for spiritualistic mediums and their requirements for special, or closed, conditions, and at least semi-darkness, if mediums were bothered by more than unquestioning or, occasionally politely questioning, faith. If some of them have been knocked about a bit, they were relatively few. Nobody in this house sat in a cabinet. Nobody was a logician. Nobody reasonably argued that chemists, for instance, must have special conditions, or their reactions will not work out. "For instance," said nobody, "how could you develop a photograph, except in the special conditions of darkness, or semi-darkness?"

The look to me is that, throughout what is loosely called Nature, teleportation exists, as a means of distribution of things and materials, and that sometimes human beings have command, mostly unconsciously, though perhaps sometimes as a development from research and experiment, of this force. It is said that in savage tribes there are "rain makers," and it may be that among savages there are teleportationists. Some years ago, I'd have looked superior, if anybody had said this to me but a good many of us are not so given to the "tut-tut!" as we used to be. It may be that in civilized communities, because of their storages, a power to attract flows of water, being no longer needed, has virtually died out, still appearing occasionally, however.

It could be that, in reading what most persons think are foolish little yarns of falling stones, we are, visionarily, in the presence of cosmic constructiveness—or that once upon a time this whole earth was built up by streams of rocks, teleported from other parts of an existence. The crash of falling islands—the humps of piling continents—and then the cosmic humor of it all—or utmost spectacularity functioning, then declining, and surviving only as a vestige— or that the force that once heaped the peaks of the Rocky Mountains now slings pebbles at a couple of farmers, near Trenton, N. J.

So I'd conceive of the existence of a force, and the use of it, unconsciously mostly, by human beings. It may be that, if somebody, gifted

with what we think we mean by “agency,” fiercely hates somebody else, he can, out of intense visualizations, direct, by teleportation, bombardments of stones upon his enemy.

Water falls on a tree, in Oklahoma. It is told of in an entomological magazine. Water falls in a house in Eccleston. I read that in a spiritualists’ periodical, though I went to a newspaper for the data. These are the isolations, or the specializations, of conventional treatments. I tell of water falling upon a tree, in Oklahoma, and of water falling in a house, in Eccleston, and think that both phenomena are manifestations of one force. It is my attempt to smash false demarcations: to take data away from narrow and exclusive treatments by spiritualists, astronomers, meteorologists, entomologists: also denying the validity of usurpations of words and ideas by metaphysicians and theologians. But my interest is not only that of a unifier: it is in bringing together seeming incongruities, and finding that they have affinity. I am very much aware of the invigoration of products of ideas that are foreign to each other, if they mate. This is exogamy, practiced with thoughts—to fertilize a volcanic eruption with a storm of frogs—or to mingle the fall of an edible substance from the sky with the unexplained appearance of Cagliostro. But I am a pioneer and no purist, and some of these stud-stunts of introducing vagabond ideas to each other may have about the eugenic value of some of the romances in houses of ill fame. I cannot expect to be both promiscuous and respectable. Later, most likely, some of these unions will be properly licensed.

Sometimes, in what I call “teleportations,” there seems to be “agency” and sometimes not. That the “agency” is not exclusively human, and has nothing to do with “spirits of the departed” is indicated, I suppose, if we accept that sometimes there are “occult powers” of trees. Some other time I may be able more clearly to think out an expression upon flows of pigeons to their homes, and flows of migratory birds, as teleportative, or quasi-teleportative. My suggestion as to the frequently reported “agency” of children, is that “occult forces” were, in earlier times of human affairs, far more prevalent, and far more necessary to the help and maintenance of human communities than they are now, with political and economic mechanisms somewhat well-established, or working, after a fashion; and that, wherein children are atavistic, they may be in rapport with forces that mostly human beings have outgrown.

Though just at present I am no darling of the popes, I expect to end up holy, some other time, with a general expression that all stories of miracles are not lies, or are not altogether lies; and that in the primitive conditions of the Middle Ages there were hosts of occurrences that now, considerably, though not altogether, have been outgrown. Anybody who broadly accepts the doctrine of relativity should accept that there are phenomena that exist relatively to one age, that do not, or do not so pronouncedly, exist in another age. I more or less accept a great deal that religionists piously believe. As I see myself, I represent a modernization of the old-fashioned atheist, who so sweepingly denied everything that seemed to interfere with his disbeliefs.

There are of course other explanations of the "occult powers" of children. One is that children, instead of being atavistic, may occasionally be far in advance of adults, foreshadowing coming human powers, because their minds are not stifled by conventions. After that, they go to school and lose their superiority. Few boy-prodigies have survived an education.

The outstanding suggestion, which, however, like many other suggestions, I cannot now develop, is that, if Teleportation exists, it may be used. It may be criminally used, or it may be used commercially. Cargoes, without ships, and freights, without trains, may be of the traffics of the future. There may be teleportative voyages from planet to planet.

Altogether, so many of our data are bound up with jokes, hoaxes, and flippant treatments that I think of the toy and play genesis of many practical inventions. Billions of dollars are today seriously drawing dividends from toys and games that were put to work. Billions of laughs and jeers have preceded solemn expressions of satisfaction with fat bank accounts. But this is only reasoning, and is nothing but logic and argument, and there have been billions of laughs that never turned into anything more satisfactory—though where do I get the idea that there is anything more satisfactory than a laugh?

If, in other worlds, or in other parts of one relatively little existence, there be people who are far ahead of terrestrians, perhaps, teleportatively, beings from other places have come to this earth. And have seen nothing to detain them. Or perhaps some of the more degraded ones have felt at home here, and have hung around, or have stayed here. I'd think of these fellows as throw-backs: concealing their origin, of course; having perhaps only a slightly foreign appearance; having affinity with our barbarisms, which their own races had cast off. I'd think of a feeling for this earth, in other

worlds, as corresponding to the desire of most of us, now and then, to go to a South Sea Island and be degraded. Throw-backs, translated to this earth, would not, unless intensely atavistic, take to what we regard as vices, but to what their own far-advanced people regard as perhaps unmentionable, or anyway, unprintable, degradations. They would join our churches, and wallow in pews. They'd lose all sense of decency and become college professors. Let a fall start, and the decline is swift. They'd end up as members of Congress.

There is another view, for which I am now gathering material—

New York Times, Dec. 6, 1930—"Scores die; 300 stricken by poison fog in Belgium; panic grips countryside. Origin complete mystery. War scenes recalled." It may be that it was war.

Mostly, explanations by the scientists were just about what one would expect, but, in the *New York Telegram*, December 6, Prof. H. H. Sheldon was quoted—"If there is a widespread, lethal fog in the Meuse Valley, the conclusion of science would be that it is being deliberately caused by men or women."

It may be that inhabitants of other worlds, or other parts of one, organic existence, have declared war upon this earth, and have discharged down here, sometimes under cover of fogs, volumes of poisonous gases. I have other records that may indicate something of this kind, but, reluctantly, I give up this interesting notion, as applied to the occurrence of Dec. 5, 1930, because it associates with another phenomenon, of which I shall tell later.

Only two weeks after the tragedy in Belgium, appeared the fishmonger. The writer of an editorial, in the *New York Herald Tribune*, Dec. 19, 1930, started the conventionalizing and the minimizing and the obscurizing that always cloak events that are inconsistent with a main norm of supposed knowledge. "One may suspect that a sensational newspaper man, counting up the deaths, some dark day, in the smoky steel towns on the Allegheny River, could produce a story not far behind that from Belgium."

Seventy-seven men and women were struck dead in Belgium. Oh, there's always some commonplace explanation for these occurrences, if we only use our common sense.

5

UPON the 9th of January, 1907, Mr. McLaughlin, of the town of Magilligan, County Derry, Ireland, hadn't a red light. Neither had his sister, nor his niece, nor his maidservant. They hadn't a cabinet. But a show was staged at their house, as if they knew altogether too much about phosphorescent paint, and as if Mr. McLaughlin bought false whiskers. There were phenomena in sunlight, and there was an atmosphere as unmystical as pigs and neighbors. If any spiritualistic medium can do stunts, there is no more need for special conditions than there is for a chemist to turn down lights, start operations with a hymn, and ask whether there's any chemical present that has affinity with something named Hydrogen.

Mr. McLaughlin had cleaned soot from the chimney. I wonder what relation there may be. It is said that immediately afterward, phenomena began. There were flows of soot from undetectable sources, in rooms, and from room to room, independent of drafts, sometimes moving against drafts. Also there were flows of stones, or bombardments. About thirty panes of glass were broken by stones, in the daytime, some of them in the presence of neighbors. This is the story, as it was told by reporters of the *Derry Journal* and the *Coleraine Constitution*, who had been sent to investigate. Probably there was a girl, aged 14 or 15, in this house, but as to the ages of Mr. McLaughlin's niece and maidservant, I could not learn particulars.

The conventionally scientific, or fishmongerish, thing to do would be to think of some commonplace explanation of the soot, and forget the stones. There would not be so much science, if people had good memories. The flows of stones can be explained as peggings by neighbors, if the soot be forgotten.

Our data have been bullied by two tyrannies. On one side, the spiritualists have arbitrarily taken over strange occurrences, as manifestations of "the departed." On the other side, conventional science has pronounced against everything that does not harmonize with its

systematizations. The scientist goes investigating, about as, to match ribbons, a woman goes shopping. The spiritualist stuffs the maws of his emotions. One is too dainty, and the other is gross. Perhaps, between these two, we shall some day be considered models of well-bred behavior.

Showers of frogs and worms and periwinkles—and now it's showers of nails. *St. Louis Globe-Democrat,* Oct. 16, 1888—dispatch from Brownsville, Texas—that, on the night of the 12th, the lighthouse, at Point Isabel, occupied by Mrs. Schreiber, widow of the keeper, who had departed not long before, had been struck by a rain of nails. The next night, about dark, came another shower of nails. More variety—also down pelted clods of earth and oyster shells. Bombardments continued. People gathered and saw showers, mostly of nails, but could not find out where they were coming from.

In *Human Nature,* March, 1871, is a story of flows of corn that were passing from a locked crib, in Buchanan, Virginia. But, in this case, it was said that apparitions were seen, and mostly, at least so far as apparitions are concerned, our accounts are not ghost stories.

There have been mysterious showers of money, in public places. I have gravely copied accounts from newspapers, but there must have been something the matter with my gravity, because I put the notes away, without indexing them, and just now can't find them, among about 60,000. One of the stories was of coins that, for several days, a few years ago, fell intermittently into Trafalgar Square, London. Traffic was so interfered with by scramblers that the police investigated, but could trace nothing to the buildings around the Square. Every now and then there was a jingle of coins, and a scramble, and the annoyance of the police was increased. They investigated.

Maybe there are experimenters who have learned to do such things, teleportatively. I'd see some sport in it, myself, if it wouldn't cost too much:

There was a piker with pennies, in London, several years ago. *New York Evening World,* Jan. 18, 1928—flows of copper coins and chunks of coal, in a house in Battersea, London, occupied by a family named Robinson. "The Robinsons are educated people, and scout the idea of a supernatural agency. However they are completely baffled, and declare the phenomena take place in closed rooms, thus precluding the possibility of objects being thrown from outside."

There's small chance of such phenomena being understood, just at present, because everybody's a logician. Almost everybody reasons: "There are not supernatural occurrences: therefore these alleged phenomena did not occur." However through some closed skulls, mostly independently of eyes and ears and noses, which tell mostly only what they should tell, is penetrating the idea that flows of coins and chunks of coal may be as natural as the flows of rivers. Those of us who have taken this degree of our initiation may now go on to a more advanced stage of whatever may be the matter with us.

Aug. 30, 1919—Swanton Novers Rectory, near Melton Constable, Norfolk, England—oil "spurting" from walls and ceilings. It was thought that the house was over an oil well, the liquid percolating and precipitating, but it was not crude oil that was falling: the liquids were paraffin and petrol. Then came showers of water. Oil was falling from one of the appearing-points, at a rate of a quart in ten minutes. Methylated spirits and sandalwood oil were falling. In an account, dated September 2nd, it is said that receptacles had been placed under appearing-points, and that about 50 gallons of oil had been caught. Of thirteen showers, upon September 1st, two were of water.

The circumstance that is of most importance in this story is that such quantities of oils and water appeared here that the Rector, the Rev. Hugh Guy, had been driven out, and had moved his furniture to another house.

London *Times,* September 9—"Norfolk Mystery Solved." We are told that Mr. Oswald Williams, the "illusionist," or the stage magician, and his wife, who were investigating, had seen the housemaid, aged 15, enter the house, which for several days had been unoccupied, and throw a glass of water, which they had salted, to a ceiling, then crying that another shower had occurred. They had shut off the water supply, in the house, and had placed around glasses and pails of water, salted so that it could be identified.

As Mr. and Mrs. Williams told it, they, in hiding, saw the girl throw the salted water, and rushed out of their hiding place and accused her. Conceivably all for the sake of science, and conceivably with not a thought of publicity-values, Mr. Williams told newspaper reporters of his successful stratagem, and put completeness into his triumph, by telling that the girl had confessed. "She admitted that she had done it, and finally she broke down and made a clean breast of it."

Times, September 12—girl interviewed by a representative of a Norwich newspaper—denied that she had confessed—denied that she had played tricks of any kind—denied that the Williamses had been in hiding—told that she had gone to the house, with Mr. and Mrs. Williams, and that a wet spot had appeared upon a ceiling, and that she had been wrongfully accused of having thrown water.

"According to the little girl's statement, she was at no time alone in the kitchen" (London *Daily News,* September 10). "She insists that she was the victim of a trick, and that great pressure was put upon her to admit that she had thrown salted water to the ceiling. 'I was told,' she said, 'that I would be given one minute to say I had done it, or go to prison. I said that I didn't do it.'"

Having an interest in ways in which data are suppressed, I have picked up some information upon how little girls are "pressed." No details of the "pressure" were published in the London newspapers. *Norfolk News,* November 8—that, in the Holt Petty Sessions had come up the case of the girl, Mabel Louisa Philippo— spelled *Phillips,* in the other accounts—complainant against Mrs Oswald Williams, who was charged with having assaulted her. The girl said that Mrs. Williams had time after time struck her in the face, and had called attention to her face, reddened by blows, as evidence of her guilt. Mrs. Philippo testified that, when she arrived at the Rectory, her daughter's first words were that she had been beaten. The Rev. Hugh Guy testified, but he did not testify that he was in the house, at the time. According to details picked up from other accounts, he was not in the house, at the time.

It is said that legal procedure in Great Britain is superior to whatever goes under that name in the United States. I can't accept that legal procedure anywhere is superior to anything. Mr. Guy, who had not been present, testified that he had not seen the girl struck, and I found no record of any objection by the girl's attorney to such testimony. The case was dismissed.

And then a document closed investigation. It was a letter from Mr. Guy, published in the *Times,* September 13. Mr. Guy wrote that he had tasted the water, upon the ceiling, and had tasted salt in it: so he gave his opinion that the girl had thrown the water. Most likely there is considerable salt, reminders of long successions of hams and bacons, on every kitchen ceiling.

According to Mr. and Mrs. Williams, the girl had confessed. But see Mr. Guy's letter to the *Times*—that the girl had not confessed.

So, because of Mr. Guy's letter, the Williamses cannot be depended upon. But we're going to find that Mr. Guy cannot be depended upon. To be sure, I am going to end up with something about photographs, but photographs cannot be depended upon. I can't see that out of our own reasoning, we can get anywhere, if there isn't anything phenomenal that can be depended upon. It is my expression that, if we are entering upon an era of a revised view of many formerly despised and ridiculed data, there will be a simultaneous variation of many minds, more favorably to them, and that what is called reasoning in those minds will be only supplementary to a general mental tropism.

The investigation was stopped by Mr. Guy. The inquiry-shearer, or the mystery-bobber, was this statement, in his letter—"It would have taken only a small quantity to create the mess."

The meaning of this statement is that, whereas gallons, or barrels, of oils, at a cost of hundreds of dollars, could not be attributed to a mischievous girl, "only a small quantity" could be.

Flows of frogs—flows of worms—flows of lies—read this:

London *Daily Express*, August 30—"The Rector, in response to a request from the *Daily Express*, for the latest news, reported as follows:

"'To the Editor of the *Daily Express:*

"'Expert engineer arriving Monday. Drippings ascribed to exudations, on August 8, of petrol, methylated spirits, and paraffin. House evacuated; vapor dangerous; every room affected; downpour rather than dripping—Guy.'"

In the *Daily Express*, September 2, is published Mr. Guy's statement that he had been compelled to move his furniture from the house.

According to other accounts, the quantities were great. In the London *Daily News* were published reports by an architect, a geologist, and a chemist, telling of observations upon profuse flows. In the Norwich newspapers, the accounts are similar. For instance, the foreman of an oil company, having been asked to give an opinion, had visited the house, and had caught in a tub, two gallons of oil, which had dripped, in four hours, from one of the appearing-points. Just how, as a matter of tricks, a girl could have been concerned in these occurrences is not picturable to me. The house was crowded, while the oil-expert, for instance, was investigating.

But it does seem that unconsciously she was concerned. The first of the showers occurred in her room. Ceilings were bored and ripped off, but nothing by which to explain was found. Then another stage magician, Mr. N. Maskelyne, went to Swanton Novers, with the idea of exposing trickery. Possibly this competition made the Williamses hasty. But Mr. Maskelyne could find nothing by which to explain the mystery. According to him (*Daily Mail*, September 10) "barrels of it" had appeared, during the time of his observations.

Just how effective, as an inquiry-stopper, was the story of the girl and the "small quantity," is shown by the way the Society for Psychical Research was influenced by it. See the *Journal S. P. R.*, October, 1919. Mr. Guy's letter to the *Times* is taken as final. No knowledge of conflicting statements by him is shown. The Society did not investigate. "A small quantity" can be explained, as it should be explained, but "barrels of it" must be forgotten. Case dismissed.

If the Rev. Hugh Guy described at one time a "downpour," which had driven out him and his tables, chairs, beds, rugs, all those things that I think of seriously, because I have recently done some moving, myself, and then told of "a small quantity," why have I not an explanation of this contradiction?

I wrote to Mr. Guy, asking him to explain, having the letter registered for the sake of a record. I have received no answer.

In the London *Daily Mail*, Sept. 3, 1919, are reproduced two photographs of oil dripping from different ceilings. Large drops of oil are clearly visible.

6

FLOWS of blood from “holy images”— I take for a proposition that, though nothing can be proved —because, if all phenomenal things are continuous, there is, in a final sense, nothing phenomenal—anything can be said to be proved—because, if all phenomenal things are continuous, the most preposterous nonsense must somewhere be linked with well-established beliefs. If I had the time for an extra job, I’d ask readers to think up loony theories, and send them to me, and I’d pick out the looniest of all, and engage to find abundant data to make it reasonable to anybody who wanted to think it reasonable.

Once upon a time I thought that stories of flows of blood from “holy images” were as ridiculous as anything that I had ever read in any astronomical, or geological textbook, or in any treatise upon economics or mechanics.

Well, then, what happened?

It occurred to me that stories of flows of blood from “holy images” are assimilable with our general expressions upon teleportations. Whereupon, automatically, the formerly despised became the somewhat reasonable. Though now and then I am ill-natured with scientific methods, it is no pose of mine that I am other than scientific, myself, in our expressions. I am tied down like any college professor or Zulu wise man.

As a start-off, I suggest that if we accept that flows of water ever have appeared at points in objects, called “houses,” a jolt is softened, and we pass easily into thinking that other fluids may have appeared at points in other objects, called “holy images.” The jolt is softened still more, if we argue that other fluids did appear at points in the object, called a “house,” at Swanton-Novers.

There may be Teleportation, and maybe for ages the secret of it has been known by esoteric ones. It may be that priests, especially in the past, when, sociologically, they were of some possible use, have known how to teleport a red fluid, or blood, to points upon images. They may have been “agents,” able to do this, without knowing how they got their effects. If I can accept

that our whole existence is an organism, I can accept that, if by so-called miracles, its masses of social growths can best be organized and kept co-ordinated, then appear so-called miracles. The only flaw that I note in this argument is that it overlooks that there is no need for miracles. If there is a need for belief in miracles, miracles can be said to have occurred.

We shall have an expression in terms of some of the other of our expressions. If we arrange the ideas of it neatly, if not nattily, no more will be required to impress anybody who would like to be impressed.

Out in open fields there have been mysterious, or miraculous, showers of water. Then has appeared the seeming "agency" of human beings, and similar showers have occurred in houses—

Out in open places, there are electrical manifestations, and they are known as "lightning." The general specializes, and human beings use electricity, in their houses, or in images that are called "machines." Or we'd say that electricians are trained "agents" in the uses of lightning.

Out in open places there have been flows of a red liquid.

In *La Nature*, Sept. 25, 1880, Prof. J. Brun, of the University of Geneva, writes that, near Djebel-Sekra, Morocco, he had heard rumors of a fall of blood from the sky. He visited the place of the reported phenomenon. He says that, to his stupefaction, he found rocks and vegetation covered with scales of a red, shining material. Examining specimens under a microscope, he found them composed of minute organisms, which he tells us were *Protococcus fluvialis.*

The identification may be doubted. I don't like it. The ease with which any writer can pick to pieces any statement made by anybody who is not present to bandy delusions with him is becoming tiresome, but if I will write a book, I will write it triumphantly.

So this identification may be doubted. First we note that Prof. Brun says that, instead of having the features of the Algae that he had named, these organisms were simple, or undifferentiated. To explain this appearance, the Professor, who had perhaps recovered from his stupefaction, says that the things were young ones. But an aggregation exclusively of young *Protococci* is as extraordinary as would be a vast assemblage, say filling Central Park, New York, of human infants, without a sign of a parent.

The explanation sublimates segregationism. It attributes to a grab, an exquisite discrimination. Somewhere in a swamp, said Prof. Brun, there were hosts of *Protococci*—venerable ones, middle-aged ones, and their

brats—or “all sizes,” as he worded it. Along came a whirlwind. Carrying away all the minute organisms, this big, rough disturbance removed, with microscopic fastidiousness, old *Protococci* from young *Protococci*, according to differences in specific gravity. It cast down at one place all the bereft parents, and precipitated, at Djebel-Sekra, a rain of little, red orphans.

When we recover from the sadness into which this tragedy cast us, we reflect that of all organisms, red blood-cells are of the simplest, or least differentiated. Anyway, here is an orthodox scientist who accepted that a red fluid did fall from the sky. I have about a dozen other records of showers of red fluids that were not rains colored by dusts. Upon several of these occasions the substance was identified as blood.

Or that once upon a time, or once upon an archaic time, there came to this earth, along arterial paths in space, red flows of a primitive plasm that deluged continents, and out of which, by the plan, purpose, guidance, or design that governs developments in all organisms, higher forms of life developed—

And that maybe this mechanism has not altogether ceased, so that to this day, but in a vestigial sense, or in a very much dwindled representation, such flows are continuing—

And that, if human beings ever have had “agency” in directing such flows, that is only a specialization of the general.

Once upon a time, it was the fashion with those of us who say that they are of the enlightened, to reject all stories of the “Miracles at Lourdes.” The doctors had much to do with this rejection. Somewhere behind everything that everybody believes, or disbelieves, is somebody’s pocket. But now, as to those “miracles,” the explanation of auto-suggestion is popular. Some of us who were not interested are beginning to think. The tendency that I point out is that of so often rejecting both data and an explanation, simply because one rejects an explanation. Many of our data are in this position of phenomena at Lourdes. Explanations have been taken over by theologians, or by spiritualists, and scientists, instead of opposing this usurpation, have denied the data. Whether it is only because I now want so to accept, or not, I now accept that the phenomenon of the stigmata, or flows of blood from points upon living images, has occurred.

Most likely those who deny the phenomenon of the stigmata are those who have not read, or have not recently read, the story of Louise Lateau, for instance. One would have to be of a very old-fashioned resistfulness not to

accept this story, half an hour after reading it. For the latest instance, that of Theresa Neumann, of the village of Konnersreuth, near Munich, Germany, see the *New York Times,* April 18, 1928. In recent years, several cases have been reported, in the United States. Flows of blood from points in living images lead us to flows of blood from points in graven images. If one accepts the phenomenon of the stigmata, I don't know that acceptance is monstrously stretched by transferring the idea from bodies to statues.

"On Saturday (Aug. 21, 1920) all statues and holy pictures, in the home of Thomas Dwan, of Templemore, Tipperary, Ireland, began to bleed." See newspapers of August 24th.

A boy, James Walsh, a devout youngster, aged sixteen, was the center of the reported phenomena, at Templemore. Perhaps the bleeding statues and pictures were trickeries of his.

All boys and girls are little rascals. This is a generalization that one can feel somewhat nearly sure of, until it is examined. Then, because of continuity, we find that we cannot define boys and girls, because no definite line can be drawn between youngsters and adults. Also rascality and virtue merge. Well, without arguing, I say that if all the boys and girls who appear in our records were rascals, they were most expert little rascals.

"Towns in ruins—terrible bloodshed—bombs and burnings— shocking series of murders—hellish vandalism—brutality and terrorism—hangings, ambushes, raids."

Whatever the association may be, I note conditions in Ireland, at this time.

Here is one newspaper heading, telling of occurrences of one day —"Reign of terror in Ireland—terrible massacre—appalling loss of life—holocaust—bloodshed and horror."

Five days before the phenomena at Templemore were first reported, this town was raided. The Town Hall was burned down, and other buildings were destroyed. Templemore was terrorized. All shops were closed. Few persons dared to be seen in the streets. On the road to Templemore there was not a cart. The town was partly in ruins. It was god-forsaken and shilling-and-pence-deserted.

I take from the *Tipperary Star:*

"In Dwan's house, and in the house of his sister-in-law, Mrs. Maher, where lived and worked the young man, James Walsh, statues started to bleed simultaneously."

This news sneaked up and down the roads. Its carriers were stealths amidst desolation and ruin. Then they scurried from farm to farm, and people were coming out from their homes. They went to Templemore to see. Then they went in droves. The roads began to hum. Sounds of tramping and the creaking of wheels—men and horses and primitive old carts and slickest of new cars from cities— it was medievalism honked with horns—or one of the crusades, with chariots slinging out beer bottles—and anachronism is just one more of the preposterous errors of Life, Nature, or an Organism, or whomever, or whatever may be the artist that does these things. The roads began to roar. Strings of people became ropes of marching thousands. Hope and curiosity, piety, and hilarity, and the incentive to make it a holiday: out for the fun of it, out to write letters to the newspapers, exposing the fakery of it, out to confirm religious teachings—but maybe all this cannot be explained in terms only of known human feelings: it was as enormous as some of the other movements of living things that I shall tell of. Then the news that was exciting Ireland was going out to the world.

The terror that chanting processions were threading may have had relation with these rhythms of marchers. They were singing their song of the long, long way, and then arriving shiploads took up the song. Messrs. Cook, the tourist agents, sent inquiries as to whether the inns of Templemore could provide for 2,000 pilgrims from England. Scotchmen and Englishmen and Frenchmen— tourist agencies in the United States, European countries, and Japan sent inquiries. Waves that billowed from this excitement beat upon Table Mountain, South Africa, and in the surf that fell upon Cape Town, people bobbed into a Committee that was sent to investigate. Drops of blood from a statue in Ireland—and a trickle of turbans down a gangway at Bombay—a band of pilgrims set out from Bombay. I am far from making a religion of it, but whatever was directing all this would make hats come off at Hollywood. Also, whether somebody was monkeying with red ink, or not, is getting lost in this story. Because of a town that the world had never before heard of, Paris and London were losing Americans.

Other phenomena, which may have been teleportations, were reported. In the earthen floor of the Walsh boy’s room, a hollow, about the size of a teacup, filled with water. No matter how it was drained—and thousands of persons took away quantities—water, from an unknown source, always returned to this appearing-point. The subject of “holy wells” occurs to me,

as a field of neglected data. Everything that I can think of occurs to me as a field of disregard and neglect. Statues in Walsh's room bled—that's the story —and, as in poltergeist doings—or as in *other* poltergeist doings—objects moved about in an invisible force.

I take notice of these stories of objects that moved in the presence of a boy, because scarcely can it be said that they were of value to priestcraft, and it can be said that they are common in accounts of occult phenomena of adolescence. I now offer as satisfactory an expression upon phenomena at Templemore, as has ever been conceived of by human mind. A Darwin writes a book about species. By what constitutes a species? He does not know. A Newton explains all things in terms of gravitation. But what is gravitation? But he has stopped. I explain the occurrences at Templemore in terms of poltergeist phenomena. Any questions? But I claim scientific license for myself, too.

Marvelous cures were reported at Templemore. What teleportations have to do with cures, I don't see: but I do see that if people believe that any marvel, such as a new arrival at a Zoo, has curative powers, there will be a pile of crutches outside the cage of that thing.

Walkers, bicyclists, motor cars, donkey carts, lorries, charabancs, wheelbarrows with cripples in them: jaunting cars, special trains rushing from Dublin. Some of the quietest old towns were in uproars. Towns all around and towns far away were reporting streets resounding with tramping thousands. There were not rooms enough in the towns. From storms of people, drifts slept on door steps. Templemore, partly in ruins, stood black in the center of a wide growth of tents. This new city, mostly of tents, was named Pilgrimsville.

I have not taken up definite accounts of the bleeding statues. See statements published in various issues of the *Tipperary Star.* They are positively convincing, or they are fairy stories for grown-up brats. I could fill pages, if I wanted to, but that would imply that I think there is any meaning in solemn assertions, or in sworn testimony, with hands on Bibles. For instance, I have notes upon an account by Daniel Egan, a harness-maker of Templemore, of blood that he had seen oozing from a statue—but this statement may be attributed to a sense of civic responsibility. He would be a bad citizen who would testify otherwise, considering the profit that was flowing into Templemore. The town's druggist, a man of what is said to be education, stated that he had seen the phenomena. He was piling up a

fortune from people who had caught bad colds sleeping in the fields. I suppose that some of them had come devoutly from far away, but had begun to sneeze, and had back-slid from piety to pills. However, something that I cannot find a hint of is that either Dwan or the Mahers charged admission. At first, people were admitted in batches of fifty, somebody, holding a watch, saying, every five minutes: "Time, please!" Soon Dwan and the Mahers placed the statues in windows, for all to see. There were crowds all day, and torchlight processions moved past these windows all night.

The blood that was shed in Ireland continued to pour from human beings: but the bleeding statues stopped, or statements that statues were bleeding stopped. However, wherever the water was coming from, it continued to flow from the appearing-point in the Walsh boy's room. In the *Tipperary Star,* September 25, the estimate is that, in about one month, one million persons had visited Pilgrimsville. To some degree the excitement kept up the rest of the year.

They were threading terror with their peaceful processions. They marched through "a terrible toll of bloodshed—wild scenes at Nenagh—the Banshaw Horror." Past burned and blackened fields in which corpses were lying, streamed these hundreds of thousands: chanting their song of the long, long way; damning the farmers, who were charging them two shillings apiece for hard-boiled eggs; praying, raiding chicken houses, telling their beads, stealing bicycles. "Mr. John McDonnell gave a pilgrim a lift, and was robbed of £250."

But one of these detachments enters a town. In another street, a man runs from a house—"My God! I'm shot!" Not far away—the steady sound of tramping pilgrims. These flows of beings are as mysterious as the teleportations of substances. They may mean an organic control, or maintenance of balance, even in a part that is diseased with bombs and ambuscades and arson.

But it is impossible, except to the hopelessly pious, to consider, with anything like veneration, any such maintenance of a balance, because, if a god of order be conceived of, also is he, or it, a god of murder.

But, regarded aesthetically, sometimes there are effects that are magnificent.

"Bloody Sunday in the County Cork!" But, upon this day, somewhere upon every road in Ireland is maintained a rhythm.

Somewhere, a lorry of soldiers is moving down a road. Out of bushes come bullets, and the sides of the car are draped with a droop of dead men. Not far away, men and women and children are marching. Along the roads of distracted Ireland—steady pulsations of people and people and people.

7

NOSE in the mud, and the bend of a thing to the ground. There are postures from which life is acting to escape: one of them, the embryonic crouch; another, whether in the degradation of worship, or as a convenience in eating grass, the bend of a neck to the ground. The all-day gnaw of the fields. But the eater of meat is released from the munch. One way to broaden horizons is to climb a tree, but another way is to stand on one's own hind legs, away from the grass. A Bernard Shaw dines on hay, and still looks behind for a world that's far ahead.

These are the disgusts for vegetarians, felt by the planters of Ceylon, in July, 1910. Very likely, I am prejudiced, myself. Perhaps I think that it is gross and brutal to eat anything at all. Why stop at vegetarianism? Vegetarianism is only a semi-ideal. The only heavenly thing to do is to do nothing. It is gross and brutal and animal-like to breathe.

We contribute to the records of strange alarms. There was one in Ceylon. Gigantic vegetarians were eating trees.

Millions of foreigners, big African snails (*Achatena fulica),* had suddenly appeared, massed in the one small district of Kalutara, near Colombo. Shells of the largest were six inches long. One of them that weighed three quarters of a pound was exhibited at the Colombo Museum. They were crowded, or massed, in one area of four square miles. One of the most important of the data is that this was in one of the mostly thickly populated parts of Ceylon. But nothing had been seen of these "gigantic snails," until suddenly trees turned knobby with the monsters. It was as surprising as it would be, in New York, going out one morning, finding everything covered with huge warts. In Colombo was shown a photograph of a tree trunk, upon the visible part of which 227 snails were counted. The ground was as thick with them as were the trees.

They were explained.

So were the periwinkles of Worcester: but we had reasons for omitting from our credulities the story of the mad fishmonger of Worcester and his frenzied assistants.

In the *Zoologist*, February, 1911, Mr. E. Ernest Green, the Government Entomologist, of Ceylon, explained. Ten years before, Mr. Oliver Collet, in a place about fifty miles from Kalutara, had received "some of these snails" from Africa, and had turned them loose in his garden. Then, because of the damage by the monsters, he had destroyed all, he thought: but he was mistaken, some of them having survived. In Kalutara lived a native, who was related to other natives, in this other place (Watawella). In a parcel of vegetables that he had brought from Watawella two of these snails had been found, and had been turned loose in Kalutara, and the millions had descended from them. No names: no date.

All the accounts, in the *Ceylon Observer,* in issues from July 27 to September 23, are of a sudden and monstrous appearance of huge snails, packed thick, and not an observation upon them until all at once appeared millions. It takes one of these snails two years to reach full size. All sizes were in this invasion. "Never known in Ceylon before." "How they came here continues to be a mystery." According to Mr. Green's report, published in a supplement of the *Ceylon Observer,* September 2, stories of the multitudes were not exaggerations: he described "giant snails in enomous numbers," "a horde in a comparatively small space," "a foreign pest." This was in a region of many plantations, and even if the hordes could have been hidden from sight in a jungle, the sounds of their gnawing and of the snapping of branches of trees under the weight of them would have been heard far.

Plantations—and the ceaseless sound of the munch. The vegetarian bend—the sagging of trees, with their tops to the ground, heavy with snails. Natives, too, and the vegetarian bend—they bowed before the invasion. They would destroy no snails: it would be a sin. A bubonic crawl—lumps fall off and leave skeletons. There would be a sight like this, if a plague could hypnotize a nation, and eat, to their bones, rigid crowds. Tumors that crawl and devour— clothing and flesh disappearing—congregations of bones.

There was a hope for infidels. When a lost soul was found, there was rejoicing in Kalutara, and double pay was handed out, satanically. The planters raked up infidels, who sinfully gathered snails into mounds and burned them.

One of our reasons for being persuaded into accepting what we wanted to accept, in the matter of the phenomenon at Worcester, was that not only

periwinkles appeared: also appeared crabs, which could not fit in with the conventional explanation. Simultaneously with the invasion of snails, there was another mysterious appearance. It was of unusually large scale-insects, which, according to Mr. Green (*Ceylon Observer,* August 9), had never before been recorded in Ceylon.

Maybe, in September, 1929, somebody lost an alligator. According to some of our data upon the insecurities of human mentality, there isn't anything that can't be lost by somebody. A look at *Losts and Founds*—but especially at *Losts*—confirms this notion. *New York American,* Sept. 19, 1929—an alligator, 31 inches long, killed in the Hackensack Meadows, N. J., by Carl Weise, 14 Peerless Place, North Bergen, N. J. But my attention is attracted by another "mysterious appearance" of an alligator, about the same time. *New York Sun,* September 23—an alligator, 28 inches long, found by Ralph Miles, in a small creek, near Wolcott, N. Y.

In the *Gentleman's Magazine,* August, 1866, somebody tells of a young crocodile, which, about ten years before, had been killed on a farm, at Over-Norton, Oxfordshire, England. In the November issue of this magazine, C. Parr, a well-known writer upon antiquarian subjects, says that, thirty years before, near Over-Norton, another young crocodile had been killed. According to Mr. Parr, still another young crocodile had been seen, at Over-Norton. In the *Field,* Aug. 23, 1862, is an account of a fourth young crocodile that had been seen, near Over-Norton.

It looks as if, for about thirty years, there had been a translatory current, especially selective of young crocodiles, between somewhere, say in Egypt, and an appearing-point near Over-Norton. If, by design and functioning, in the distribution of life in an organism, or in one organic existence, we mean anything so misdirected as a teleportation of young crocodiles to a point in a land where they would be out of adaptation, we evidently mean not so very intelligent design and functioning. Possibly, or most likely. It seems to me that an existence that is capable of sending young butchers to medical schools, and young boilermakers to studios, would be capable of sending young crocodiles to Over-Norton, Oxfordshire, England. When I go on to think of what gets into the Houses of Congress, I expect to come upon data of mysterious distributions of cocoanuts in Greenland.

There have often been sudden, astonishing appearances of mice, in great numbers. In the autumn of 1927, millions of mice appeared in the fields of Kern County, California. Kern County, California, is continuous with all the

rest of a continent: so a sudden appearance of mice there is not very mysterious.

In May, 1832, mice appeared in the fields of Inverness-shire, Scotland. They were in numbers so great that foxes turned from their ordinary ways of making a living and caught mice. It is my expression that these mice may have arrived in Scotland, by way of neither land nor sea. If they were little known in Great Britain, the occurrence of such multitudes is mysterious. If they were unknown in Great Britain, this datum becomes more interesting. They were brown; white rings around necks; tails tipped with white. In the *Magazine of Natural History*, 7-182, a correspondent writes that he had examined specimens, and had not been able to find them mentioned in any book.

I have four records of snakes that were said to have fallen from the sky, in thunderstorms. Miss Margaret McDonald, of Hawthorne, Mass., has sent me an account of many speckled snakes that appeared in the streets of Hawthorne, one time, after a thunder-storm.

Because of our expressions upon teleportative currents, I am most interested in repetitions in one place. Upon May 26, 1920, began a series of tremendous thunderstorms, in England, culminating upon the 29th, in a flood that destroyed 50 houses, in Louth, Lincolnshire. Upon the 26th, in a central part of London—Gower Street—near the British Museum, a crowd gathered outside Dr. Michie's house. Gower Street is in Bloomsbury. To the Bloomsbury boarding houses go the American schoolmarms who visit London, and beyond the standards of Bloomsbury—primly pronounced *Bloomsbry*—respectability does not exist. Dr. Michie went out and asked the crowd what it, or anything else, could mean by being conspicuous in *Bloomsbry.* He was told that in an enclosure behind his house had been seen a snake.

In a positive sense, he did not investigate. He simply went to a part of the enclosure that was pointed out to him. Though, in his general practice, Dr. Michie was probably as scientific as anybody else, I must insist that this was no scientific investigation. He caught the snake.

The creature was explained. It was said to be a *naja haja*, a venomous snake from Egypt. Many oriental students live in Gower Street, to be near the British Museum and University College: in all probability the oriental snake had escaped from an oriental student.

You know, I don't see that oriental students having oriental snakes is any more likely than that American students should have American snakes: but there is an association here that will impress some persons. According to my experience, and according to data to come, I think that somebody "identified" an English adder, as an oriental snake, to fit in with the oriental students, and then fitted in the oriental students with the oriental snake, arguing reasonably that if an oriental snake was found where there were oriental students, the oriental snake had probably escaped from the oriental students. As I have pointed out, often enough, I know of no reasoning process that is not parthenogenetic, and if this is the way the identification and the explanation came about, the author of them has companionship with Plato and Darwin and Einstein, and earthworms.

The next day, there was another crowd: this one in a part of London far from Gower Street (Sydenham). A snake had been seen in a garden. Then a postman killed it. Oriental students do not live in Sydenham. This snake was an adder (London *Daily Express,* May 28).

Upon the 29th, in Store Street, near Gower Street, a butcher, Mr. G. H. Hill, looked out from his shop, and saw a snake wriggling along the sidewalk. He caught the snake which was probably an adder—picture of it in the *Weekly Dispatch,* of the 30th.

So there were some excitements, but they were mild, compared with what occurred in a crowded part of London, June 2nd. See the *Daily Express,* June 3. Outside the Roman Catholic Cathedral (Westminster) an adder appeared. This one stopped traffic, and had a wide audience that approached and retreated, and reacted with a surge to every wriggle, in such a disproportion that there's no seeing how action and reaction can always be equal. Three men jumped on it. This one is told of, in the *Westminster and Pimlico News,* June 4 and 11, and here it is said that another adder had appeared in Westminster, having been caught under a mat at Morpethmansions. About this time, far away in North London (Willesden), an adder was killed in a field (*Times,* June 21).

Common sense tells me that probably some especially vicious joker had been scattering venomous snakes around. But some more common sense tells me that I cannot depend upon common sense.

I have received letters upon strange appearances of living things in tanks of rain water that seemed inaccessible except to falls from the sky. Mr. Edward Foster, of Montego Bay, Jamaica, B. W. I., has told me of

crayfishes that were found in a cistern of rain water at Port Antonio, Jamaica. Still, such occurrences may be explained, conventionally. But, in the London *Daily Mail*, Oct. 6, 1921, Major Harding Cox, of Newick, Sussex, tells of an appearance of fishes that is more mysterious. A pond near his house had been drained, and the mud had been scraped out. It was dry from July to November, when it was re-filled. In the following May, this pond teemed with tench. One day, 37 of them were caught. Almost anybody, interested, will try to explain in terms of spawn carried by winds, or in mud on the feet of water birds, but I am going right ahead with ideas different from Darwinian principles of biologic distributions. Major Cox, who is a well-known writer, probably reviewed all conventional explanations, but still he was mystified. There would not be so much of the interesting in this story, were it not for his statement that never before had a tench been caught in this pond.

Eels are mysterious beings. It may be that what are called their "breeding habits" are teleportations. According to what is supposed to be known of eels, appearances of eels anywhere cannot be attributed to transportations of spawn. In the *New York Times*, Nov. 30, 1930, a correspondent tells of mysterious appearances of eels in old moats and in mountain tarns, which had no connection with rivers. Eels can travel over land, but just how they rate as mountain climbers, I don't know.

In the *Amer. Jour. Sci.*, 16-41, a correspondent tells of a ditch that had been dug on his farm, near Cambridge, Maryland. It was in ground that was a mile from any body of water. The work was interrupted by rain, which fell for more than a week. Then, in the rain water that filled the ditch, were found hundreds of perch, of two species. The fishes could not have developed from spawn, in so short a time: they were from four to seven inches long. But there was, here, a marksmanship that strikes my attention. Nothing is said of dead fishes lying upon the ground, at sides of the ditch: hundreds of perch arrived from somewhere, exactly in this narrow streak of water. There could have been nothing so scattering as a "shower." Accept this story, and it looks as if to a new body of water, vibrating perhaps with the needs of vacancy, there was response somewhere else, and that, with accuracy, hundreds of fishes were teleported. If somebody should have faith in us, and dig a ditch and wait for fish, and get no fish, and then say that we're just like all other theorists, we explain that, with life now well established upon this earth, we regard many teleportations as mere

atavisms, of no functional value. This idea of need and response, or of the actively functional, is taking us into a more advanced stage of a conception of an organic existence. For a while, we shall make no progress with this expression, having much work to do, to make acceptable that there is teleportation, whether organic, or not.

Perhaps some sudden and widespread appearances of exotic plants were teleportations. Such appearances in Australia and New Zealand seem to be satisfactorily explained, as ordinary importations: but, in the London *Daily News*, April 1, 1924, Dr. F. E. Weiss, Professor of Botany, University of Manchester, tells of the Canadian pond weed that suddenly infested the canals and slow-moving rivers of England, about the year 1850, and says that the phenomenon never had been satisfactorily explained.

Cardiff (Wales) *Evening Express*, July 1, 1919—"The countryside is set by the ears!" That's a queer way for a countryside or anything else to be set. There may have been a queer occurrence. It is said that, upon land, belonging to Mr. William Calvert, between the villages of Sturton and Stowe, ten miles from Lincoln, wheat had appeared. It was ten years since wheat had grown here. There had been barley, but this year the field had been left fallow. "It was a fine crop of wheat, apparently of more robust growth than some in the cultivated fields around. Farmers from far and near were going to see this phenomenon, but nobody could explain it."

Perhaps, at the same time, another "mystery crop" appeared somewhere else. *Sunday. Express* (London), Aug. 24, 1919—that, in a field, near Ormskirk, West Lancashire, where, the year before, because of a drought, wheat had died off so that there was nothing worth harvesting, a crop of wheat had appeared. That some of the seeds that had been considered worthless should sprout would not have been considered extraordinary, but this was "one of the best crops of vigorous, young wheat in West Lancashire, for the season."

Though I am not a very pious theologian, I take respectful notice here. A Providence that gives one snails, or covers one's property with worms, has to be called "inscrutable": but we can understand a good crop of wheat better, and that is enough to make anybody grateful, until come following seasons, with no more benefactions.

We take up again the phenomenon of localized repetitions, which suggest the existence of persisting translatory currents. If again we come to the seemingly preposterous, we reflect that we have only preposterous pseudo-

standards to judge by. In this instance, the sending of salt water fishes to a fresh water lake is no more out of place than, for instance, is the sending of chaplains to battleships: and, of course, in our view, it is what is loosely called Nature that is doing all things. Perhaps what is called Nature amuses itself by occasionally sending somewhat intelligent fellows to theological seminaries, and salt water fishes to fresh water. Whether we theologians believe in God, or accept that there is an Organism, wherein we agree is in having often to apologize for him or it.

In *Science*, Dec. 12, 1902, Dr. John M. Clarke writes that a strange-looking fish had been caught in Lake Onondaga, Western New York, and had been taken to Syracuse. Here it was identified as a squid. Then a second specimen was caught.

Whatever thoughts we're trying to develop did not belong away back in the Dark Age, or the *other* Dark Age, of the year 1902. Just where they do belong has not been decided yet. Said Dr. Clarke, with whatever reasoning abilities people had in the year 1902: "There are salt springs near Lake Onondaga: so perhaps there is, in the lake, a sub-stratum of salt water." The idea is that, for millions of years, there had been, in Lake Onondaga, ocean life down below, and fresh water things swimming around, overhead, and never mixing. Perhaps, by way of experiment, Dr. Clarke put salt water and a herring in an aquarium, and then fresh water and a goldfish on top, and saw each fish keeping strictly to his own floor, which is the only way to get along as neighbors.

Another scientist turned on his reasoning abilities. Prof. Ortman, of Princeton University, examined one of the specimens, which, according to him, was "a short-finned squid, of the North Atlantic, about 13 inches long." Prof. Ortman reasoned that Atlantic fishermen use squid for bait. Very well: then other fishermen may use squid for bait. So somebody may have sent for squid, to go fishing in Lake Onondaga, and may have lost a couple of live ones.

This is the science that is opposing our own notions. But for all I know, it may be pretty good science. An existence that would produce such explainers, might very well produce such fishermen. So perhaps fishermen of Lake Onondaga, with millions of worms around, send several hundred miles for squid, for bait, and perhaps Atlantic fishermen, with millions of squid available, send all the way to Lake Onondaga for worms. I've done foolisher, myself.

It seems to me that there is something suggestive in the presence of large deposits of salt near this lake, but I have heard nothing of salt water in it. There's no telling about a story that was published, in the *New York Times*, May 2, 1882, but if it could be accepted, here would be something worth thinking about—that a seal had been shot, in Lake Onondaga. Some years before the appearance of the squid, another sea creature, a sargassum fish, had been caught in Lake Onondaga. It had been exhibited in Syracuse, according to Prof. Hargitt, of Syracuse University (*Science*, n. s., 17-114). It has to be thought that these things were strays. If they were indigenous and propagated, they'd be common.

For various reasons, I do not think much of an idea of an underground passage, all the way from the ocean to Lake Onondaga: but, in the London *Daily Mail*, July 1, 1920, a correspondent expresses an idea, like this, as to mysterious appearances and disappearances of the Barbary apes of Gibraltar, conceiving of a submarine tunnel from Gibraltar to Africa. "All these creatures were well-known to the staff of the signal station on the Rock, many of the apes being named. The numbers sometimes change in the most unaccountable way. Well-known monkeys are absent for months, and then reappear with new, strange, adult monkeys of a similar breed. Those who know Gibraltar will agree that there is not a square yard on the Rock where they could have hidden."

Chicago Citizen, Feb. 27, 1892—an alligator, 5½ feet long, found frozen to death on a bank of the Rock River, near Janesville, Wisconsin. In the *Field*, Sept. 21, 1895, it is said that a parrakeet had appeared in a farm yard, where it was caught, at Gledhill, Ardgay, Scotland, and that, about two years later, another parrakeet appeared in this farm yard, and was caught. Both birds were males. "No one living anywhere near had missed a bird, upon either occasion."

Later, we shall have expressions upon psychological, and also physiological, effects of teleportative seizures. It may be that a living thing, in California, was, upon the first of August, 1869, shot from point to point, and was torn to pieces, in the passage.

Flesh and blood that fell "from the sky," upon Mr. J. Hudson's farm, in Los Nietos Township, California—a shower that lasted three minutes and covered an area of two acres. The conventional explanation is that these substances had been disgorged by flying buzzards. "The day was perfectly

clear, and the sun was shining, and there was no perceptible breeze," and if anybody saw buzzards, buzzards were not mentioned.

The story is told, in the *San Francisco Evening Bulletin*, Aug. 9, 1869. The flesh was in fine particles, and also in strips, from one to six inches long. There were short, fine hairs. One of the witnesses took specimens to Los Angeles, and showed them to the Editor of the *Los Angeles News*, as told in the *News*, August 3rd. The Editor wrote that he had seen, but had not kept the disagreeable objects, to the regret of many persons who had besieged him for more information. "That the meat fell, we cannot doubt. Even the parsons of the neighborhood are willing to vouch for that. Where it came from, we cannot even conjecture." In the *Bulletin*, it is said that, about two months before, flesh and blood had fallen from the sky, in Santa Clara County, California.

London *Daily Express*, March 24, 1927—a butterfly, a Red Admiral, that had appeared in a corner of the Girls' National School, at Whittlesey. It is said that every year, for sixteen years, a butterfly had so appeared in this corner of this room, about the end of February, or the first of March. I wrote to Miss Clarke, one of the teachers, and she replied, verifying the story, in general, though not vouching for an appearance every one of the sixteen years. I kept track, and wrote again, early in 1928. I copy the letter that I received from Miss E. Clarke, 95 Station Road, Whittlesey. As to the idea of jokes by little girls, I do not think that little girls could get Red Admiral butterflies, in the wintertime, in England.

"On the 9th of February, a few days before I received your letter, a lovely Red Admiral again appeared at the same window. The girls were all quietly at work, when suddenly a voice exclaimed: 'Oh! Miss Clarke—the butterfly!' This child was with me, last year, and remembered the sudden appearance then, which I may add, was later, March 2nd, in fact.

"As I am writing, the visitor is fluttering about the window, and seems quite lively. Last year's visitor lived about a month after its appearance, and then we found it dead.

"There is nothing else that I can tell you about our annual visitor, but really it does seem remarkable."

Early in the year 1929, I again wrote to Miss Clarke, but this time she did not answer me. Maybe a third letter was considered too much of a correspondence with somebody who had not been properly introduced. Anyway, people do not like to go upon record, in such matters.

There are circumstances in the story of the children of Clavaux that linger in my mind. It was a story of a double, or reciprocating, current. I have searched for accounts of a mysterious disappearance and an equally mysterious appearance, or something in the nature of an exchange, in the same place.

Upon Dec. 12, 1910, a handsome, healthy girl disappeared somewhere in New York City. The only known man in her affairs lived in Italy. It looks as if she had no intention of disappearing: she was arranging for a party, a tea, whatever those things are, for about sixty of her former schoolmates, to be held upon the 17th of the month. When last seen, in Fifth Avenue, she said that she intended to walk through Central Park, on her way to her home, near the 79th Street entrance of the park. It may be that somewhere in the eastern part of the park, between the 59th Street and the 79th Street entrances, she disappeared. No more is known of Dorothy Arnold.

This day something appeared in Central Park. There was no record of any such occurrence before. As told, in the *New York Sun*, December 13th, scientists were puzzled. Upon the lake, near the 79th Street entrance, appeared a swan.

Mountainous districts of Inverness-shire, Scotland—mysterious footprints in the bogs—sheep and goats slaughtered. “A large, fierce, yellow animal of unknown species” was seen by a farmer, who killed it. More mysterious tracks in the bogs, and continued slaughter—another large, fierce, yellow animal was shot. Soon a third specimen was caught in a trap. “The body was sent to the London Zoo, where it was identified as that of a lynx.” See the London *Daily Express*, Jan. 14, 1927. There is no record of the lynx, as indigenous to Great Britain. “It is found, in Europe, in the Alps, and the Carpathians, and more often in the Caucasus. The last specimen, in France, was killed 100 years ago.”

I have a feeling of impiety, in recording this datum. So many of our data are upon a godness that so much resembles idiocy that to attribute intelligence to it may be even blasphemous. Early in this theological treatise we noted a widespread feeling that there is something of the divine in imbecility. But, if these three lynxes were teleported, say from somewhere in the Carpathians, there was good sense to this teleportation, and there was a good shot this time, because they landed in a lynx’s paradise. There is no part of Great Britain that is richer in game than is Inverness-shire, and the country abounds with deer and sheep. However, if into this Eden were shot

an Adam and two Eves, and these two Eves cats, we may think of this occurrence with a restored piety.

In the London evening newspapers, Aug. 26, 1926, it was told that a mystery had been solved. People in Hampstead (London) had reported that, in the pond, in Hampstead Heath, there was a mysterious creature. Sometimes it was said that the unknown inhabitant was a phantom, and there were stories of dogs that had been taken to the pond, and had sniffed, and had sneaked away, "with their tails between their legs." All this in a London park. There was a story of "a huge, black creature, with the head of a gorilla, and a bark like that of a dog with a sore throat." Mostly these were fishermen's tales. Anglers sit around this pond, and sometimes they catch something.

Upon the night of August 25th, the line of one of these anglers, named Trevor, was grabbed. He landed something.

This is Mr. Trevor's story. For all I know, he may have been out on an iceberg somewhere, hunting for materials for his wife's winter coat, catching something that was insufficient, if he had a large wife. All that can be said is that Trevor appeared at a hotel, near the pond, carrying a small animal that he said he had caught in the pond.

Mr. F. G. Gray, proprietor of the hotel, had an iron tank, and in this the creature was lodged: and the next day the newspapers told that a young seal had been caught. Reporters went to the place, and one of them, the *Evening News* representative, took along Mr. Shelley, of the London Zoo. Mr. Shelley identified the animal as a young seal and no tame specimen, but a wild one that snapped at fingers that were poked anywhere near him.

So it was said that a mystery had been solved.

But there were stories of other seals that had been seen or had been heard barking, before the time of the birth of this seal, in this London pond. One would think that the place was somewhere in Greenland. It was Mr. Gray's statement that for several years, there had been, intermittently, these sounds and appearances. The pond is connected with the River Fleet, which runs into the Thames, and conceivably a seal could make its way, without being reported, from the ocean to this park, far inland in London: but the idea of seals coming and going, without being seen on the way, in a period of several years, whereas in centuries before nothing of the kind had been heard of, was enough to put this story where most of our other stories, or data, have been put. Mostly the opinion is that they should stay there.

London *Daily Mail,* Nov. 2, 1926—"Tale that taxes credulity!" "A story of two seals, within three months, in a local pond, is taxing the credulity of residents of Hampstead." But there is a story of another seal that had been caught, after a struggle, dying soon after capture. In the *Daily Chronicle,* it is said that the "first mysterycatch" was still in the tank, in a thriving condition.

I have come upon more, though to no degree enlighteningly more, about the apes of Gibraltar. In the *New York Sun,* Feb. 6, 1929, Dr. Raymond L. Ditmars tells of an "old legend" of a tunnel, by which apes travel back and forth, between Africa and Spain. No special instances, or alleged instances, are told of. In Gilbard's *History of Gibraltar,* published in 1881, is mention of the "wild and impossible theory of communication, under sea, between Gibraltar and the Barbary coast." Here it is said that the apes were kept track of, so that additions to families were announced in the Signal Station newspaper. The notion of apes in any way passing across the Mediterranean is ridiculous to Gilbard, but he notes that there are so many apes upon the mountain on the African side of the Strait of Gibraltar that it is known as the Hill of Apes.

In November, 1852, a much talked about subject, in England, was reindeer's ears. There were letters to the newspapers. Reindeer's ears came up for discussion in Parliament. Persons who had never seen a reindeer were dogmatizing upon reindeer's ears. It had been reported that among reindeer's skins that had arrived at Tromsö, Norway, from Spitzbergen were some with the ears clipped.

Many Englishmen believed that Sir John Franklin had sailed through the Northwest Passage, and that survivors of his expedition were trying to communicate with occasional hunters in Spitzbergen, by marking reindeer. Spitzbergen was uninhabited, and no other explanation could be thought of. Spitzbergen is about 450 miles north of North Cape, Norway, and possibly an exceptional reindeer could swim this distance, but this is a story of many reindeer. All data upon drifting ice are upon southward drifts.

Branded reindeer, presumably from Norway or Finland, continued to be reported in Spitzbergen, but by what means they made the journey never has been found out. Lamont, in *Yachting in Arctic Seas,* p. 110, says that he had heard of these marked animals, and that, in August, 1869, he had shot two stags, each having the left ear "back half-cropped." "I showed them to Hans, a half-bred Lapp, accustomed to deal with reindeer since infancy, and

he had no doubt whatever of these animals having been marked by the hands of men." Upon page 357, Lamont tells of having shot two more reindeer, similarly marked. Nordenskiold (*Voyage of the Vega*, vol. 1, p. 135) tells of these marked reindeer, some of them marked also upon antlers, and traces reports back to the year 1785. Upon one of these antlers was tied a bird's leg.

Wherever they are coming from, and however they are doing it, or however it is being done to them, the marked reindeer are still appearing in Spitzbergen. Some of them that were shot, in the summer of 1921, are told of in the *Field*, Dec. 24, 1921. It must be that hundreds, or thousands, of these animals have appeared in Spitzbergen. There is no findable record of one reindeer having ever been seen drifting on ice in that direction. As to the possibility of swimming, I note that Nova Zembla is much nearer the mainland than is Spitzbergen, but that Nordenskiold says that the marked reindeer do not appear in Nova Zembla.

8

THERE is no way of judging these stories. Every canon, or device, of inductive logic, conceived of by Francis Bacon and John Stuart Mill has been employed in investigating some of them, but logic is ruled by the fishmonger. Some of us will think as we're told to think, and be smug and superior, in rejecting the yarns: others will like to flout the highest authority, and think that there may be something in them, feeling that they're the ones who know better, and be just as smug and superior. Smug, we're going to be, anyway, just so long as we're engaged in any profession, art, or business, and have to make balance somewhere against a consciousness of daily stupidities. I should think that somebody in a dungeon, where it is difficult to make bad mistakes, would be of the least smug. Still, I don't know: I have noted serene and self-satisfied looks of mummies. The look of an egg is of complacency.

There is no way of judging our data. There are no ways, except arbitrary ways, of judging anything. Courts of Appeals are of the busiest of human institutions. The pragmatist realizes all this, and says that there is no way of judging anything except upon the basis of the work-out. I am a pragmatist, myself, in practice, but I see no meaning in pragmatism, as a philosophy. Nobody wants a philosophy of description, but does want a philosophy of guidance. But pragmatists are about the same as guides on the top of a mountain, telling climbers, who have reached the top, that they are on the summit. "Take me to my destination," says a traveler. "Well, I can't do that," says a guide, "but I can tell you when you get there."

My own acceptance is that ours is an organic existence, and that our thoughts are the phenomena of its eras, quite as its rocks and trees and forms of life are; and that I think as I think, mostly, though not absolutely, because of the era I am living in. This is very much the philosophy of the *Zeitgeist*, but that philosophy, as ordinarily outlined, is Absolutism, and I am trying to conceive of a schedule of predetermined—though not absolutely predetermined— developments in one comprehensibly-sized existence, which may be only one of hosts of other existences, in which the

scheduled eras correspond to the series of stages in the growth, say, of an embryo. There is, in our expressions, considerable of the philosophy of Spinoza, but Spinoza conceived of no outlines within which to think.

In anything like a satisfactory sense there is no way of judging our data, nor of judging anything else: but of course we have ways of forming opinions that are often somewhat serviceable. By means of litmus, a chemist can decide whether a substance is an acid, or an alkali. So nearly is this a standard to judge by that he can do business upon this basis. Nevertheless there are some substances that illustrate continuity, or represent the merging-point between acids and alkalis; and there are some substances that under some conditions are acids, and under other conditions are alkalis. If there is any mind of any scientist that can absolutely pronounce either for or against our data, it must be more intelligent than litmus paper.

A barrier to rational thinking, in anything like a final sense, is continuity, because of which only fictitiously can anything be picked out of a nexus of all things phenomenal, to think about. So it is not mysterious that philosophy, with its false, or fictitious, differences, and therefore false, or fictitious, problems, is as much baffled as it was several thousand years ago.

But if, for instance, no two leaves of any tree are exactly alike, so that all appearances are set apart from all other appearances, though at the same time all interrelated, there is discontinuity, as well as continuity. So then the frustrations of thought are double. Discontinuity is a barrier to anything like a finally sane understanding, because the process of understanding is a process of alleged assimilation of something with something else: but the discontinuous, or the individualized, or the unique, is the unassimilable.

One explanation of our survival is that there is underlying guidance, or control, or organic government, which to high degree regularizes the movements of the planets, but is less efficient in its newer phenomena. Another explanation is that we survive, because everybody with whom we are in competition, is equally badly off, mentally.

Also, in other ways, how there can be survivals of persons and prestiges, or highest and noblest of reputations, was illustrated recently. About April Fool’s Day, 1930, the astronomers announced that, years before, the astronomer Lowell, by mathematical calculations of the utmost complexity, or bewilderingly beyond the comprehension of anybody except an astronomer, had calculated the position of a ninth major planet in this solar

system: and that it had been discovered almost exactly in the assigned position. Then columns, and pages of special articles, upon this triumph of astronomical science. But then a doubt appeared—there were a few stray paragraphs telling that, after all, the body might not be the planet of Lowell's calculations—the subject was dropped for a while. But, in the public mind, the impressions worked up by spreadheads enormously outweighed whatever impressions came from obscure paragraphs, and the general idea was that, whatever it was, there had been another big, astronomical triumph. It is probable that the prestige of the astronomers, instead of suffering, was boomed by this overwhelming of obscure paragraphs by spreadheads.

I do not think that it is vanity, in itself, that is so necessary to human beings: it is compensatory vanity that one must have. Ordinarily, one pays little if any attention to astronomers, but now and then come consoling reflections upon their supposed powers. Somewhere in everything that one does there is error. Somebody is not an astronomer, but he classes himself with astronomers, as differentiated from other and "lower" forms of life and mind. Consciousness of the irrationality, or stupidity, pervading his own daily affairs, is relieved by a pride in himself and astronomers, as contrasted with dogs and cats.

According to the Lowell calculations, the new planet was at a mean distance of about 45 astronomical units from the sun. But, several weeks after April Fool's Day, the object was calculated to be at a mean, or very mean, distance of 217 units. I do not say that an educated cat or dog could do as well, if not better: I do say that there is a great deal of delusion in the gratification that one feels when thinking of himself and astronomers, and then looking at a cat or a dog.

The next time anybody thinks of astronomers, and looks at a cat, and feels superior, and would like to keep on feeling superior, let him not think of a cat and a mouse. The cat lies down and watches a mouse. The mouse moves away. The cat knows it. The mouse wobbles nearer. The cat knows whether it's coming or going.

In April, 1930, the astronomers told that Lowell's planet was receding so fast from the sun that soon it would become dimmer and dimmer.

New York Times, June 1, 1930—Lowell's planet approaching the sun—for fifty years it would become brighter and brighter.

A planet is rapidly approaching the sun. The astronomers publish highly technical “determinations” upon its rate of recession. Nobody that I know of wrote one letter to any newspaper. One reason is that one fears to bring upon oneself the bullies of science. In July, 1930, the artist, Walter Russell, sent some views that were hostile to conventional science to the *New York Times. Times,* August 3rd— a letter from Dr. Thomas Jackson—a quotation from it, by which we have something of an idea of the self-apotheosis of these pundits, who do not know, of a thing in the sky, whether it is coming or going:

“For nearly three hundred years no one, not even a scientist, has had the temerity to question Newton’s laws of gravitation. Such an act on the part of a scientist would be akin to blasphemy, and for an artist to commit such an absurdity is, to treat it kindly, an evidence of either misguidance or crass ignorance of the enormity of his act.”

If we’re going to be kind about this, I simply wonder, without commenting, what such a statement as that for nearly three hundred years nobody had ever questioned Newton’s laws of gravitation, is evidence of.

But in the matter of Lowell’s planet, I neglected to point out how the astronomers corrected their errors, and that is a consideration of importance to us. Everything that was determined by their mathematics turned out wrong—planet coming instead of going— period of revolution 265 years, instead of 3,000 years—eccentricity of orbit three tenths instead of nine tenths. They corrected, according to photographs.

It is mathematical astronomy that is opposing our own notions.

Photographic astronomy can be construed any way one pleases— say that the stars are in a revolving shell, about a week’s journey away from this earth.

Everything mathematical cited by me, in this Lowell-planet-controversy, was authoritatively said by somebody one time, and equally authoritatively denied by somebody else, some other time. Anybody who dreams of a mathematician’s heaven had better reconsider, if of its angels there be more than one mathematician.

9

I HAVE come upon a story of somebody, in Philadelphia, who, having heard that a strange wild animal was prowling in New Jersey, announced that he had caught it. He exhibited something, as the "Jersey Devil." I have to accept that this person was the press agent of a dime museum, and that the creature that he exhibited was a kangaroo, to which he had attached tin wings and green whiskers. But, if better-established branches of biology are subject to Nature-fakery, what can be expected in our newer biology, with all the insecurities of newness?

"Jersey Devils" have been reported other times, but, though I should not like to be so dogmatic as to say that there are no "Jersey Devils," I have had no encouragement investigating them. One of the stories, according to a clipping that was sent to me by Miss F. G. Talman, of Woodbury, N. J., appeared in the *Woodbury Daily Times,* Dec. 15, 1925. William Hyman, upon his farm, near Woodbury, had been aroused by a disturbance in his chicken coop. He shot and killed a never-before-heard-of-animal. I have written to Mr. Hyman, and have no reason to think that there is a Mr. Hyman. I have had an extensive, though one-sided, correspondence, with people who may not be, about things that probably aren't. For the latest account of the "Jersey Devil," see the *New York Times,* Aug. 6, 1930.

Remains of a strange animal, teleported to this earth from Mars or the moon—very likely, or not so likely—found on a bank of a stream in Australia. See the *Adelaide Observer,* Sept. 15, 1883—that Mr. Hoad, of Adelaide, had found on a bank of Brungle Creek, a headless trunk of a pig-like animal, with an appendage that curved inward, like the tail of a lobster. *New Zealand Times,* May 9, 1883— excitement near Masterton—unknown creature at large—curly hair, short legs, and broad muzzle. Dogs sent after it—one of the dogs flayed by it—rest of the dogs running away—probably "with their tails between their legs," but the reporter overlooking this convention.

There have been stories of strange animals that have appeared at times of earthquakes and volcanic eruptions. See Sea Serpent stories, about the time

of the Charleston earthquake. About the same time, following a volcanic eruption in New Zealand, there were stories in New Zealand.

The volcano Rotomahana was a harsh, black cup that had spilled scenery. Or the somber thing was a Puritan in finery. It had belied its dourness with two broad decorations of siliceous deposits, shelving down to its base, one of them the White Terrace and the other the Pink Terrace. These gay formations sloped from the bare, black crater to another inconsistency, which was a grove of acacias. All around, the famous flowering bushes of this district made more sinful contrast with a gaunt, towering thing. Upon the 10th of June, 1886, this Black Fanatic slung a constitutional amendment. It was reformation, in the sense that virtue is uniformity that smothers variation. It drabbed its gay Terraces: the grove of acacias was a mound of mud: it covered over the flowering bushes with smooth, clean mud. It was a virtuously dismal scene, but, as in all other reformations, a hankering survived in it. A left-over living thing made tracks in the smoothness of mud. In the *New Zealand Herald*, Oct. 13, 1886, a correspondent writes of having traversed this dull, dead expanse, having seen it marked with the footprints of a living creature. He thought that the marks were a horse's. But there was another story that was attracting attention at this time, and his letter was in allusion to it. Maoris were telling of a wandering animal, unknown to them, that had appeared in this desert of mud. It was a creature with antlers, or a stag, according to descriptions, an animal that had never been seen, or had never before been seen, by Maoris.

Just what relation I think I can think of, between volcanic eruptions and mysterious appearances of living things may seem obscure. But I have been impressed with several accounts of astonishing revivifications in regions that were volcanically desolated. Quick growths of plants have been attributed to the fertilizing properties of volcanic dust: nevertheless writers have expressed astonishment. If we can have an organic view of our existence, we can think of restorative teleportations to a place of desolation, quite as we think of restorations occurring in places of injury in an animal-organism.

There are phenomena upon the border-line between the organic and the inorganic that we can think of: such as restorations of the forms of broken crystals in a solution. It is by automatic purpose, or design or providence, or guidance by which lost parts of a starfish are regenerated. In higher animal-organisms, distinct structures, if lost, mostly are not restored, but injured

tissues are. Still even in the higher organisms there are some restorations of mutilated parts, such as renewals of forms of a bird's clipped wing-feathers. The tails of some lizards, if broken off, renew.

For a conventional explanation of reviving plants in a fern forest that had been destroyed by flows of liquid lava, from the volcano Kilauea, Hawaii, see an account, by Dr. G. R. Wieland, in *Science*, April 11, 1930. Dr. Wieland considers his own explanation "amazing." I'd not say that ours is more than that.

Strange animals have appeared and they may have been teleported to this earth from other parts of an existence, but the easiest way of accounting for strange animals is to say that they are hybrids. Of course I could handle, or manhandle, this subject any way to suit me, and be about as reasonable one way as another. I could quote many authorities against the occurrence of bizarre hybrids, leaving hard to explain, in terms of terrestrial origin, strange creatures that have appeared upon this earth. There are biologists who will not admit fertility between creatures as much alike as hares and rabbits. Nevertheless, I think that there have been strange hybrids.

The cow that gave birth to two lambs and a calf.

I don't know how that will strike all minds, but to the mind of a standardized biologist, I'd not be much more preposterous, if I should tell of an elephant that had produced two bicycles and a baby elephant.

The story is told in the *Toronto Globe*, May 25, 1889. It is said that a member of the staff of the *Globe* had been sent to investigate this outrage upon conventional obstetrics. The reporter went to the farm of Mr. John H. Carter, at South Simcoe, and then wrote that he had seen the two lambs, which were larger and coarser than ordinary, or less romantically derived, lambs, having upon their breasts tufts of hair like calves' hair. Other newspapers—*Quebec Daily Mercury*, for instance—published other details, such as statements by well-known stockbreeders that they had examined the lambs, and were compelled to accept the story of their origin.

So I am harming our idea that creatures, unlike anything known upon this earth, but that have appeared upon this earth, may have been teleported from Mars or the moon: but I am supporting our general principle that, whether in biology, astronomy, obstetrics, or any other field of research, everything that is, also isn't; and that everywhere there are data, partly sense and partly nonsense, that oppose established nonsense that has partly some sense to it.

It does not matter what scientific dictum may be brought against us. I will engage to find that it is only an approximation, or that it is a work-out only in imaginary conditions. The most rigorous science is frosted childishness. Every severe, or chaste, treatise upon mechanics is only a fairy story of frictionless and non-extensible characters that interact up to the "happy ending." Nowadays, a scenario-writer will sometimes tone down the absolute happiness of a conclusion, with just a suggestion that there is a little trouble in the offing: but the tellers of theorems represent about the quality of intellect in the most primitive times of Hollywood. For everything that is supposed to be so well-known that it is proverbial, there are exceptions. A mule is a symbol of sterility. For instances of fertility in mules, look over indexes of the *Field*. As to anything else that we're taking as absolute truth—look it up.

One afternoon, in October, 1878, Mr. Davy, a naturalist, who was employed at the London Aquarium, took a stroll with a new animal. I think of a prayer that is said to have been uttered by King Louis XIV. He was tired of lamb chops and beef and bacon—"Oh, God! send me a new animal." Mr. Davy took a stroll with one. People far away were attracted by such screeches as are seldom heard in London. Some ex-slaves, who were playing in *Uncle Tom's Cabin*, were following the new animal, and were letting loose their excitability. The creature was about two feet long, and two feet high, and was formed like nothing known to anatomists—anyway to anatomists of this earth. It was covered with wiry hair: head like a boar's, and curly tail like a boar's. It was described as "a living cube." As if with abdomen missing, its hind legs were close to its forelegs. If Mr. Davy's intention had been to attract attention, he was succeeding. Almost anybody with the modern view of things will think what a pity he wasn't advertising something. The crowd jammed around so that he ran into an Underground Railway Station. Here there was an uproar. He was compelled to ride in the brake, because of a fear that there would be a panic among the passengers. At the Aquarium, Davy told that an acquaintance of his, named Leman, had seen this creature with some peasants, in the South of France, and had bought it, but, unable to speak the *patois* of the district, had been unable to learn anything of its origin. At the Aquarium the only explanation that could be thought of was that it was a dog-boar hybrid.

Davy's publicity continued. He took the new animal to his home, and a crowd went with him. His landlord looked at the animal. When the animal

looked at the landlord, the landlord ran to his room, and from behind closed doors, ordered Davy to take away the monster. There was another hold-up of traffic all the way to the home of Frank Buckland.

In *Land and Water*, of which he was the editor, issue of October 5, Buckland wrote an account of this "demon," as he called it, saying that it looked like a gargoyle, or like one of Fuseli's satanic animals. He did not try to explain, but mentioned what was thought at the Aquarium. In the next issue of *Land and Water*, Thomas Worthington, the naturalist, wrote that the idea of the hybrid was "utterly untenable": but his own idea that the creature was "a tame hyena of some abnormal kind" leaves mysterious how the "demon" ever got into the possession of peasants in the South of France. It would be strange if they had a tame hyena of a normal kind.

In January, 1846 (*Tasmanian Journal of Science*, 3-147), a skull was found on a bank of the river Murrumbridgee, Australia. It was examined by Dr. James Grant, who said that the general form and arrangement of the teeth were different from those of any animal known to him. He noted somebody's suggestion that it might be the skull of one of the camels that had been sent to Australia, in the year 1839. He accounted for its having characters that were unknown to him, by thinking that it might be foetal. So then, whether in accordance with a theory or not, he found that some of the bones were imperfectly ossified, and that the teeth were covered with a membrane. It was not a fossil. It was a skull of a large, herbivorous animal, and had not been exposed long.

Melbourne Argus, Feb. 28, and March 1, 1890—a wandering monster. A list of names and addresses of persons who said that they had seen it, was published. It was a creature about thirty feet long, and was terrorizing the people of Euroa. "The existence of some altogether unheard-of monster is vouched for by a cloud of credible witnesses."

I am tired of the sensible explanations that are holding back new delusions. So I suggest that this thing, thirty feet long, was not a creature, but was a construction, in which explorers from somewhere else, were traveling back and forth, near one of this earth's cities, having their own reasons for not wanting to investigate too closely.

I don't know what will be thought of zoologists of Melbourne, but whatever will be thought of me can't be altogether focused upon me, because there were scientists in Melbourne who were as enlightened as I am, or as preposterous and sensational as I am. Officials of the Melbourne

Zoological Gardens thought that, whether this story was nonsense or not, it should be looked into. They got a big net, and sent a man with the net to Euroa. Forty men, with the man with the net, set out. They hunted all day, but no huge bulk, more or less in the distance, was seen, and a statement that enormous tracks were found may be only a sop to us enlightened, or preposterous, ones.

But the man with the net is a significant character. He had not the remotest of ideas of using it, but, just the same, he went along with it. There are other evidences of occasional open-mindedness among biologists, and touches of indifference, now and then, to whatever may be the fascinations of smugness. Why biologists should be somewhat less dogmatic than astronomers, or why association with the other animals should be rather more liberalizing than is communion with the stars is not mysterious. One can look at a rhinoceros and at the same time be able to think. But the stupefying, little stars shine with a hypnotic effect, like other glittering points. The little things are taken too seriously. They twinkle humorously enough, themselves.

A reported monster is told of, in the *Scientific American*, July, 1922. Dr. Clement Onelli, Director of the Zoological Gardens, of Buenos Aires, had published a letter that had been sent to him by an American prospector named Sheffield, who said that, in the Argentine Territory of Chebut, he had seen huge tracks, which he had followed to a lake. “There I saw in the middle of the lake an animal with a huge neck, like that of a swan, and the movement of the water made me suppose the beast to have a body like that of a crocodile.” I wrote to Dr. Onelli, and received a reply, dated Aug. 15, 1924, telling that again he had heard of the monster. Maybe this same huge-necked creature was seen somewhere else, however we explain its getting there. The trouble in trying to understand all reported monsters is their mysterious appearances and disappearances. In the London *Daily Mail*, Feb. 8, 1921, a huge, unknown animal, near the Orange River, South Africa, is told of by Mr. F. C. Cornell, F.R.G.S. It was something with a neck like a bending tree trunk, “something huge, black, and sinuous.” It devoured cattle. “The object may have been a python, but if it was it was of incredible size.” It is only preposterously unreasonable to think that the same thing could have appeared in South Africa and then in South America.

The “blonde beast of Patagonia,” which was supposed to be a huge ground sloth, parts of which are now in various museums, attracted

attention, in the year 1899. See the *Zoologist*, August, 1899. Specimens of the blonde's hide were brought to England, by Dr. F. P. Moreno, who believed that the remains had been preserved for ages. We prefer to think otherwise: so we note that Dr. Ameghino, who got specimens of the hide from the natives, said that it was their story that they had killed it.

There was a volley of monsters from some other world, about the time of the Charleston earthquake, or some one thing skipped around with marvelous agility, or it is that, just before the quake, there were dull times for the newspapers. So many observations in places far apart can be reconciled by thinking that not a creature but explorers in a construction, had visited this earth. They may have settled down in various places. However, it is pretty hard to be reconciled to our reconciliations.

New York Sun, Aug. 19, 1886—a horned monster, in Sandy Lake, Minnesota. More details, in the *London* (Ontario) *Advertiser*— Chris. Engstein fired a shot at it, but missed. Then came dispatches from the sea coast. According to one of them, Mr. G. P. Putnam, Principal of a Boston grammar school, had seen a monster, in the sea, at Gloucester. In *Science*, 8-258, Mr. B. A. Colona, of the U. S. Coast Survey, writes that, upon the 29th of August, he had seen an unknown creature in the sea off Cape Cod. In the New York newspapers, early in September, a monster was reported as having been seen at sea, off Southport, and off Norwalk, Conn.: in Michigan, in the Connecticut River, and in the Hudson River. The conventional explanation is that this was simply an epidemic of fancied observations. Most likely some of them were only contagions.

There's a yarn, or a veritable account, in the *New York Times*, June 10, 1880—monstrous, dead thing, floating on the sea, bottom up. Sailors rowed to it, and climbed up its sides. They danced on its belly. That's a merry, little story, but I know a more romantic one. It seems that a monster was seen from a steamship. Then the lonely thing mistook the vessel for a female of his species. He overwhelmed her with catastrophic endearments.

But I am avoiding stories of traditional serpentine monsters of the sea. One reason is that collections of these stories are easily available. The astronomer has not lived, who has ever collected and written a book upon data not sanctioned by the dogmas of his cult, but my slightly favorable opinion of biologists continues, and I note that a big book of Sea Serpent stories was written by Dr. Oudemans, Director of the Zoo, at The Hague, Holland. When that book came out, a review of it, in *Nature*, was not far

BERSERKER

BOOKS